

---

---

**United States Court of Appeals  
for the Federal Circuit**

---

MEMORYWEB, LLC

*Appellant*

v.

SAMSUNG ELECTRONICS CO., LTD.,

*Appellee*

---

Nos. 2024-1315, -1316

---

Appeals from the Patent and Trademark Office, Patent Trial and Appeal  
Board in Case Nos. IPR2022-00221 and IPR2022-00222

---

**APPELLANT MEMORYWEB LLC'S OPENING BRIEF AND  
NON-CONFIDENTIAL ADDENDUM**

JENNIFER HAYES  
NIXON PEABODY LLP  
300 S. Grand Avenue, Suite 4100  
Los Angeles, CA 90071-3151  
Tel: 213-629-6000

DANIEL SCHWARTZ  
MATTHEW WERBER  
ANGELO CHRISTOPHER  
NIXON PEABODY LLP  
70 W. Madison Street, Suite 5200  
Chicago, IL 60602-4378  
Tel: 312-977-4400

*Counsel for Appellant MemoryWeb, LLC*

## EXEMPLARY PATENT CLAIMS

### U.S. Patent No. 10,621,228

#### **Claim 1:**

1. A method comprising:

responsive to a first input, causing a map view to be displayed on an interface, the map view including:

- (i) an interactive map;
- (ii) a first location selectable thumbnail image at a first location on the interactive map; and
- (iii) a second location selectable thumbnail image at a second location on the interactive map;

responsive to an input that is indicative of a selection of the first location selectable thumbnail image, causing a first location view to be displayed on the interface, the first location view including (i) a first location name associated with the first location and (ii) a representation of at least a portion of one digital file in a first set of digital files, each of the digital files in the first set of digital files being produced from outputs of one or more digital imaging devices, the first set of digital files including digital files associated with the first location;

responsive to an input that is indicative of a selection of the second location selectable thumbnail image, causing a second location view to be displayed on the interface, the second location view including (i) a second location name associated with the second location and (ii) a representation of at least a portion of one digital file in a second set of digital files, each of the digital files in the second set of digital files being produced from outputs of the one or more digital imaging devices, the second set of digital files including digital files associated with the second location; and

responsive to a second input that is subsequent to the first input, causing a people view to be displayed on the interface, the people view including:

- (i) a first person selectable thumbnail image including a representation of a face of a first person, the first person being associated with a third set of digital files including digital photographs and videos;
- (ii) a first name associated with the first person, the first name being displayed adjacent to the first person selectable thumbnail image;
- (iii) a second person selectable thumbnail image including a representation of a face of a second person, the second person being associated with a fourth set of digital files including digital photographs and videos; and
- (iv) a second name associated with the second person, the second name being displayed adjacent to the second person selectable thumbnail image.

**U.S. Patent No. 10,423,658**

**Claim 1:**

1. A computer-implemented method of displaying at least a portion of a plurality of (i) digital photographs, (ii) videos, or (iii) a combination of (i) and (ii), each of the digital photographs and videos being associated with a geotag indicative of geographic coordinates where the respective digital photograph or video was taken, the method comprising:

displaying an application view on a video display device including displaying a plurality of selectable elements, the plurality of selectable elements including a location selectable element;

responsive to a click or tap of the location selectable element, displaying a map view on a video display device, the displaying the map view including displaying:

- (i) a representation of an interactive map;
- (ii) a first location selectable thumbnail image at a first location on the interactive map, the first location being associated with the geographic coordinates of a first geotag, a first set of digital photographs and videos including all of the digital photographs and videos associated with the first geotag;

(iii) a first count value image partially overlapping the first location selectable thumbnail image, the first count value image including a first number that corresponds to the number of digital photographs and videos in the first set of digital photographs and videos;

(iv) a second location selectable thumbnail image at a second location on the interactive map, the second location being associated with the geographic coordinates of a second geotag, a second set of digital photographs and videos including all of the digital photographs and videos associated with the second geotag; and

(v) a second count value image partially overlapping the second location selectable thumbnail image, the second count value image including a second number that corresponds to the number of digital photographs and videos in the second set of digital photographs and videos;

responsive to a click or tap of the first location selectable thumbnail image, displaying a first location view on the video display device, the displaying the first location view including displaying (i) a first location name associated with the first geotag and (ii) a scaled replica of each of the digital photographs and videos in the first set of digital photographs and videos, the displayed scaled replicas of each of the digital photographs and videos in the first set of digital photographs and videos not being overlaid on the interactive map; and

responsive to a click or tap of the second location selectable thumbnail image, displaying a second location view on the video display device, the displaying the second location view including displaying (i) a second location name corresponding to the second geotag and (ii) a scaled replica of each of the digital photographs and videos in the second set of digital photographs and videos, the displayed scaled replicas of each of the digital photographs and videos in the second set of digital photographs and videos not being overlaid on the interactive map.



FORM 9. Certificate of Interest

Form 9 (p. 1)  
March 2023

**UNITED STATES COURT OF APPEALS  
FOR THE FEDERAL CIRCUIT**

**CERTIFICATE OF INTEREST**

**Case Number** 2024-1315, 2024-1316

**Short Case Caption** MemoryWeb, LLC v. Samsung Electronics Co., Ltd.

**Filing Party/Entity** MemoryWeb, LLC

**Instructions:**

1. Complete each section of the form and select none or N/A if appropriate.
2. Please enter only one item per box; attach additional pages as needed, and check the box to indicate such pages are attached.
3. In answering Sections 2 and 3, be specific as to which represented entities the answers apply; lack of specificity may result in non-compliance.
4. Please do not duplicate entries within Section 5.
5. Counsel must file an amended Certificate of Interest within seven days after any information on this form changes. Fed. Cir. R. 47.4(c).

I certify the following information and any attached sheets are accurate and complete to the best of my knowledge.

Date: 05/17/2024

Signature: /s/ Jennifer Hayes

Name: Jennifer Hayes

## FORM 9. Certificate of Interest

Form 9 (p. 2)  
March 2023

<b>1. Represented Entities.</b> Fed. Cir. R. 47.4(a)(1).	<b>2. Real Party in Interest.</b> Fed. Cir. R. 47.4(a)(2).	<b>3. Parent Corporations and Stockholders.</b> Fed. Cir. R. 47.4(a)(3).
Provide the full names of all entities represented by undersigned counsel in this case.	Provide the full names of all real parties in interest for the entities. Do not list the real parties if they are the same as the entities.  <input checked="" type="checkbox"/> None/Not Applicable	Provide the full names of all parent corporations for the entities and all publicly held companies that own 10% or more stock in the entities.  <input checked="" type="checkbox"/> None/Not Applicable
MemoryWeb, LLC		

☐ Additional pages attached

FORM 9. Certificate of Interest

Form 9 (p. 3)  
March 2023

**4. Legal Representatives.** List all law firms, partners, and associates that (a) appeared for the entities in the originating court or agency or (b) are expected to appear in this court for the entities. Do not include those who have already entered an appearance in this court. Fed. Cir. R. 47.4(a)(4).

☒ None/Not Applicable ☐ Additional pages attached


**5. Related Cases.** Other than the originating case(s) for this case, are there related or prior cases that meet the criteria under Fed. Cir. R. 47.5(a)?

☒ Yes (file separate notice; see below) ☐ No ☐ N/A (amicus/movant)

If yes, concurrently file a separate Notice of Related Case Information that complies with Fed. Cir. R. 47.5(b). **Please do not duplicate information.** This separate Notice must only be filed with the first Certificate of Interest or, subsequently, if information changes during the pendency of the appeal. Fed. Cir. R. 47.5(b).

**6. Organizational Victims and Bankruptcy Cases.** Provide any information required under Fed. R. App. P. 26.1(b) (organizational victims in criminal cases) and 26.1(c) (bankruptcy case debtors and trustees). Fed. Cir. R. 47.4(a)(6).

☒ None/Not Applicable ☐ Additional pages attached


## TABLE OF CONTENTS

TABLE OF CONTENTS.....	i
TABLE OF AUTHORITIES .....	v
STATEMENT OF RELATED CASES.....	viii
JURISDICTIONAL STATEMENT .....	viii
INTRODUCTION .....	1
STATEMENT OF THE ISSUES.....	3
STATEMENT OF THE CASE.....	6
A.    The Inventions of the MemoryWeb Patents.....	6
1.    The ‘228 Patent .....	9
2.    The ‘658 Patent .....	10
B.    IPR2022-00221 (‘228 Patent) .....	11
1.    IPR Proceedings .....	11
a)    Claim Construction Positions .....	12
b)    MemoryWeb’s Argument That a Skilled Artisan Would Not Combine Okamura and Belitz .....	14
2.    The Board’s Decision .....	15
C.    IPR2022-00222 (‘658 Patent) .....	17
1.    IPR Proceedings .....	17
a)    Claim Construction Positions .....	17
b)    MemoryWeb’s Argument That a Skilled Artisan Would Not Combine Okamura and Belitz .....	18
2.    The Board’s Decision .....	18
SUMMARY OF THE ARGUMENT .....	21
STANDARD OF REVIEW .....	23
ARGUMENT .....	24
I.    THE BOARD ERRED IN CONSTRUING THE CLAIMS OF THE MEMORYWEB PATENTS.....	24
A.    The Board Erred in Construing the “People View” to not	

Require That Two Names and Two Thumbnails Be Displayed Simultaneously .....	24
1. The People View Requires a First Thumbnail, First Name, Second Thumbnail, and Second Name .....	24
2. The Board’s Construction Conflicts with Contextual Claim Language and the Purpose of the Inventions .....	26
B. The Board Erred in Construing “Responsive To” to Mean “Subsequent To” Rather Than Requiring a Cause-Effect Relationship in the ‘658 IPR and Failing to Construe it in the ‘228 IPR .....	31
1. The Board Wrongly Equated “Responsive To” with “Subsequent To” .....	32
2. The Claims, When Read as a Whole, Require a Cause-Effect Relationship .....	34
3. The Board’s Construction is Unsupported by the Specification .....	36
4. The Board Wrongly Considered Enablement in the ‘658 Decision .....	39
5. “Responsive To” Applies to All Elements of the “People View” in Claim 1 of the ‘228 Patent .....	42
II. THE BOARD ERRED IN FINDING THAT OKAMURA DISCLOSES DISPLAYING THE CLAIMED PEOPLE VIEW .....	43
A. Okamura Does Not Disclose Displaying Two Names Simultaneously in a People View .....	43
B. Okamura’s Alleged “People View” is Not Displayed “Responsive To” the Input Required in the Claims .....	45
III. THE BOARD ERRED IN FINDING THAT OKAMURA DISCLOSES THE DISPLAYING THE FIRST PERSON VIEW IN CLAIMS 7-12 OF THE ‘658 PATENT .....	46
A. The Board’s Findings in the ‘658 Decision are Irreconcilable with the Findings in the ‘228 Decision that Samsung did not Cross-Appeal .....	47
1. Issue Preclusion Resulting from the Final ‘228 Decision Requires Reversing the ‘658 Decision’s Claims 7-12 Findings .....	50

2.	The ‘658 Decision Should Alternatively be Vacated and Remanded in View of the Board’s Inconsistent Findings .....	53
B.	Okamura Does Not Disclose Displaying a “[First/Second] Person View” Under the Proper Construction of “Responsive To” .....	54
C.	Okamura Does Not Disclose Displaying the “First Person View” Even Under the Board’s Incorrect Construction .....	59
IV.	THE BOARD ERRED IN FINDING THAT IT WOULD HAVE BEEN OBVIOUS TO COMBINE OKAMURA AND BELITZ .....	61
A.	The Board Ignored MemoryWeb’s Arguments Regarding Okamura’s Teaching Away.....	61
1.	Okamura Disparages “Related Art” that Suffered from Scaling Problems.....	62
2.	Samsung’s Proposed Combinations of Okamura and Belitz Have the Same Scaling Problems as the Related Art .....	65
3.	The Board Mischaracterized the Issues and Failed to Address MemoryWeb’s Arguments.....	67
B.	The Board Committed Additional Legal Errors in its Obviousness Analysis in the ‘228 Decision.....	68
1.	The Board Failed to Find Any Purported Advantages Offered by the Combination.....	69
2.	The Board Misapplied the Law by Failing to Weigh Advantages and Disadvantages of the Combination .....	70
C.	The Board Committed Additional Legal Errors in the ‘658 Decision.....	71
	CONCLUSION AND RELIEF SOUGHT .....	72

**CONFIDENTIAL MATERIAL OMITTED**

Pursuant to Fed. Cir. R. 25.1(e)(1)(B), material subject to the Protective Order in IPR2022-00222 has been redacted from the public version of the Final Written Decision (Appx9) in the addendum. The redacted information includes confidential information relating to Appellee’s relationship with Unified Patents, LLC (“Unified”) and Unified’s business operations (Appx33–37, Appx39, Appx41, Appx43, Appx46–61) and communications between Appellant and Unified (Appx42–43, Appx53). There is no confidential information contained in the Opening Brief.

## TABLE OF AUTHORITIES

	Page(s)
<b>Cases</b>	
<i>ACTV, Inc. v. Walt Disney Co.</i> , 346 F.3d 1082 (Fed. Cir. 2003) .....	35
<i>Alacritech, Inc. v. Intel Corp.</i> , 966 F.3d 1367 (Fed. Cir. 2020) .....	59, 60
<i>Alcon Research, Ltd. v. Apotex Inc.</i> , 687 F.3d 1362 (Fed. Cir. 2012) .....	39, 40
<i>Alloc, Inc. v. Int’l Trade Com’n</i> , 342 F.3d 1361 (Fed. Cir. 2003) .....	29
<i>Arctic Cat Inc. v. Bombardier Recreational Products Inc.</i> , 876 F.3d 1350 (Fed. Cir. 2017) .....	70
<i>Bailey v. Dart Container Corp. of Mich.</i> , 292 F.3d 1360 (Fed. Cir. 2002) .....	52
<i>BASF Corp. v. Enthone, Inc.</i> , 749 F. App’x 978 (Fed. Cir. 2018) .....	53
<i>Bd. of Regents of the Univ. of Tex. Sys. v. BENQ Am. Corp.</i> , 533 F.3d 1362 (Fed. Cir. 2008) .....	32
<i>Chemours Co. FC, LLC v. Daikin Indus., Ltd.</i> , 4 F.4th 1370 (Fed. Cir. 2021) .....	61, 67
<i>Emerson Elec. Co. v. SIPCO, LLC</i> , 745 F. App’x 369 (Fed. Cir. 2018) .....	53
<i>Google LLC v. Conversant Wireless Licensing S.A.R.L.</i> , 753 F.App’x 890 (Fed. Cir. 2018) .....	61, 67
<i>Google LLC v. Hammond Dev. Int’l, Inc.</i> , 54 F.4th 1377 (Fed. Cir. 2022) .....	23, 50, 51, 52



<i>In re Lee</i> , 277 F.3d 1338 (Fed. Cir. 2002) .....	23
<i>In re Nuvasive, Inc.</i> , 842 F.3d 1376 (Fed. Cir. 2016) .....	60, 69
<i>Kinetic Concepts, Inc. v. Smith &amp; Nephew, Inc.</i> , 688 F.3d 1342 (Fed. Cir. 2012) .....	69
<i>Liebel-Flarsheim Co. v. Medrad, Inc.</i> , 358 F.3d 898 (Fed. Cir. 2004) .....	40
<i>MaxLinear, Inc. v. CF CRESPE LLC</i> , 880 F.3d 1373 (Fed. Cir. 2018) .....	52
<i>Medgraph, Inc. v. Medtronic, Inc.</i> , 843 F.3d 942 (Fed. Cir. 2016) .....	27
<i>Ohio Willow Wood Co. v. Alps S., LLC</i> , 735 F.3d 1333 (Fed. Cir. 2013) .....	51
<i>Personalized Media Commc 'ns, LLC v. Apple Inc.</i> , 952 F.3d 1336 (Fed. Cir. 2020) .....	23
<i>Pers. Web Techs., LLC v. Apple, Inc.</i> , 848 F.3d 987 (Fed. Cir. 2017) .....	69
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005) .....	23, 27, 39, 40
<i>Plas-Pak Indus., Inc. v. Sulzer Mixpac AG</i> , 600 F.App'x 755 (Fed. Cir. 2015) .....	70, 71
<i>Polaris Indus., Inc. v. Arctic Cat, Inc.</i> , 882 F.3d 1056 (Fed. Cir. 2018) .....	23, 70, 71, 72
<i>Praxair Distrib., Inc. v. Mallinckrodt Hosp. Prods. IP Ltd.</i> , 890 F.3d 1024 (Fed. Cir. 2018) .....	23

<i>Provisur Techs., Inc. v. Weber, Inc.</i> , 50 F.4th 117 (Fed. Cir. 2022) .....	39
<i>SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.</i> , 242 F.3d 1337 (Fed. Cir. 2001) .....	29
<i>Securus Techs., Inc. v. Glob. Tel*Link Corp.</i> , 685 F. App'x 979 (Fed. Cir. 2017) .....	61
<i>Trading Techs. Int'l, Inc. v. eSpeed, Inc.</i> , 595 F.3d 1340 (Fed. Cir. 2010) .....	30
<i>Univ. of Strathclyde v. Clear-Vu Lighting LLC</i> , 17 F.4th 155 (Fed. Cir. 2021) .....	23
<i>Vicor Corp. v. SynQor, Inc.</i> , 869 F.3d 1309 (Fed. Cir. 2017) .....	53, 61, 67
<i>Wi-Fi One, LLC v. Broadcom Corp.</i> , 887 F.3d 1329 (Fed. Cir. 2018) .....	36
<i>Winner Int'l Royalty Corp. v. Wang</i> , 202 F.3d 1340 (Fed. Cir. 2000) .....	70, 71

## **Statutes**

5 U.S.C. § 706 .....	23
28 U.S.C. § 1295 .....	viii
35 U.S.C. § 6 .....	viii
35 U.S.C. § 112 .....	40
35 U.S.C. § 141 .....	viii
35 U.S.C. § 311 .....	viii

## **Rules and Regulations**

37 C.F.R. § 90.3(a)(1) .....	viii
------------------------------	------

## STATEMENT OF RELATED CASES

No other appeal from these proceedings has previously been before this or any other appellate court. The following proceedings may be directly affected by this Court's decision in these appeals:

- *Apple Inc. v. MemoryWeb, LLC*, Nos. 23-2361, 24-1043, 24-1050, 24-1318, 24-1320 (Fed. Cir.);
- *MemoryWeb, LLC v. Samsung Electronics Co., Ltd.*, No. 24-1332 (Fed. Cir.);
- *MemoryWeb, LLC v. Unified Patents, LLC*, No. 24-1328 (Fed. Cir.);
- *MemoryWeb, LLC v. Apple Inc.*, 3:21-cv-09839-VC (N.D. Cal.); and
- *MemoryWeb, LLC v. Samsung Electronics Co., Ltd. et al.*, 3:22-cv-03776-VC (N.D. Cal.).

Counsel is aware of no other case that may directly affect or be directly affected by the outcome of this appeal.

## JURISDICTIONAL STATEMENT

The Board had jurisdiction under 35 U.S.C. §§ 6(b) and 311 et seq. and issued its final written decisions on July 31, 2023 in IPR2022-00221 and December 18, 2023 in IPR2022-00222. Appx105; Appx9. MemoryWeb timely appealed on January 3, 2024. 37 C.F.R. § 90.3(a)(1). Appx6999–7002; Appx13580–13582. This Court ordered consolidation. Dkt. 11. This Court has jurisdiction over MemoryWeb's appeals under 35 U.S.C. § 141(c) and 28 U.S.C. § 1295(a)(4)(A).

## INTRODUCTION

This appeal arises from two *inter partes* reviews involving MemoryWeb’s ‘658 and ‘228 Patents (collectively, “the MemoryWeb Patents”) that are directed to methods for managing digital files such as digital photographs. The methods enable users to navigate through and view their captured memories via an interactive interface in a novel way.

The MemoryWeb Patents require displaying a people view that includes two thumbnails and two names “responsive to” a particular user input. The Board erred by construing the claims such that there can be multiple intervening user inputs between the claimed user input and the display of the people view and such that the display of that people need not include each of the four features of the people view at the same time, i.e., the two thumbnails and two names. Okamura, the prior art that the Board relied on for this limitation, requires additional user inputs to display the names in the people view and cannot display both names at the same time.

The Board’s ‘658 and ‘228 Decisions are inconsistent. The ‘228 Decision found that Samsung did not meet its burden of showing claims 18-19 are unpatentable, and Samsung did not cross-appeal the ‘228 Decision. Claim 7 of the ‘658 Patent is nearly identical to claim 18 of the ‘228 Patent, and Samsung’s Petitions are nearly identical for these claims, but the Board reached the opposite conclusion. Issue preclusion requires reversing the ‘658 Decision as to claim 7 (and

its dependent claims). Alternatively, the Board's failure to explain its inconsistent decisions requires remand. Furthermore, Okamura does not disclose the limitations of claim 7 under either party's construction of "responsive to."

The Board also erred in finding it would have been obvious to combine Okamura with Belitz. Okamura discredits "related art" that used markers on a map to show where photos were taken. Okamura describes scaling problems in the related art and proposes to solve those problems with so-called "cluster maps," which are miniature maps with varying scales. In the Okamura-Belitz combination, Okamura's cluster maps are eliminated, reintroducing the exact same problems as the related art. The Board ignored these facts in its obviousness analysis and mischaracterized MemoryWeb's arguments about Okamura's teaching away.

Pursuant to Federal Circuit Rule 28(j), MemoryWeb provides notice that portions of its brief are duplicative of or nearly duplicative of briefs in related cases *MemoryWeb, LLC v. Unified Patents, LLC*, No. 24-1328 and *MemoryWeb, LLC v. Samsung Electronics Co., Ltd.*, No. 24-1332, which address appeals of other Board Decisions involving the '228 Patent and other MemoryWeb patents that share a common specification and that concern the same "responsive to" construction dispute.

For these reasons, and as explained below, the Board's decisions as to MemoryWeb's appeals should be reversed or at least vacated and remanded.

## STATEMENT OF THE ISSUES

1. The MemoryWeb Patents claim a “people view” that simultaneously displays both two thumbnails and two names. Did the Board err in construing the people view such that both names are not required to be displayed simultaneously with the thumbnails?
2. All claims in the MemoryWeb Patents recite the phrase “responsive to.” For instance, claim 5 of the ‘658 Patent recites displaying a people view “responsive to a click or tap of the people selectable element.” Similarly, the ‘228 Patent recites causing a people view to be displayed “responsive to a second input.”
  - a. For the ‘658 Patent, did the Board err in construing “responsive to” to merely require that the second event happens subsequent to the first event?
  - b. For the ‘228 Patent, did the Board err in construing claim 1 such that the display of the claimed features of the people view does not have a direct cause-effect relationship with the second input?
3. Okamura does not disclose displaying the people view of claim 1 of the ‘228 Patent and claim 5 of the ‘658 Patent under MemoryWeb’s construction. Did the Board err in finding that Okamura discloses the “people view” based on its erroneous constructions?

4. Okamura does not disclose displaying the people view responsive to the claimed inputs of claim 1 of the '228 Patent and claim 5 of the '658 Patent under MemoryWeb's constructions. Did the Board err in finding that Okamura discloses the "people view" responsive to the required inputs based on its erroneous constructions?
5. In the '228 Decision, the Board correctly found that Samsung failed to show that Okamura discloses claim 18 of the '228 patent because there are multiple intervening views and events between displaying an alleged people view and displaying an alleged first person view. Samsung did not appeal that finding. Claim 7 of the '658 patent is nearly identical to claim 18 of the '228 patent.
  - a. Does issue preclusion require reversing the Board's finding in the '658 Decision that claim 7 is unpatentable?
  - b. Did the Board err in reaching the opposite conclusion in the '658 Decision where the claim language and Samsung's arguments are nearly identical?
6. The primary reference in both proceedings, Okamura, discredits "related art" that used markers on a map to show where photos were taken. Okamura describes scaling problems in the related art and proposes to solve those problems with so-called "cluster maps." Modifying Okamura with the

secondary reference in both proceedings, Belitz, eliminates Okamura's cluster maps.

- a. Did the Board err in finding that it would be obvious to combine Okamura and Belitz in ways that result in the same scaling problems as the related art discredited by Okamura?
- b. Did the Board err by failing to identify advantages offered by the combination in the '228 IPR?
- c. Did the Board err by failing to weigh the advantages of combining Okamura and Belitz against the disadvantages in both Decisions?



## STATEMENT OF THE CASE

### A. The Inventions of the MemoryWeb Patents

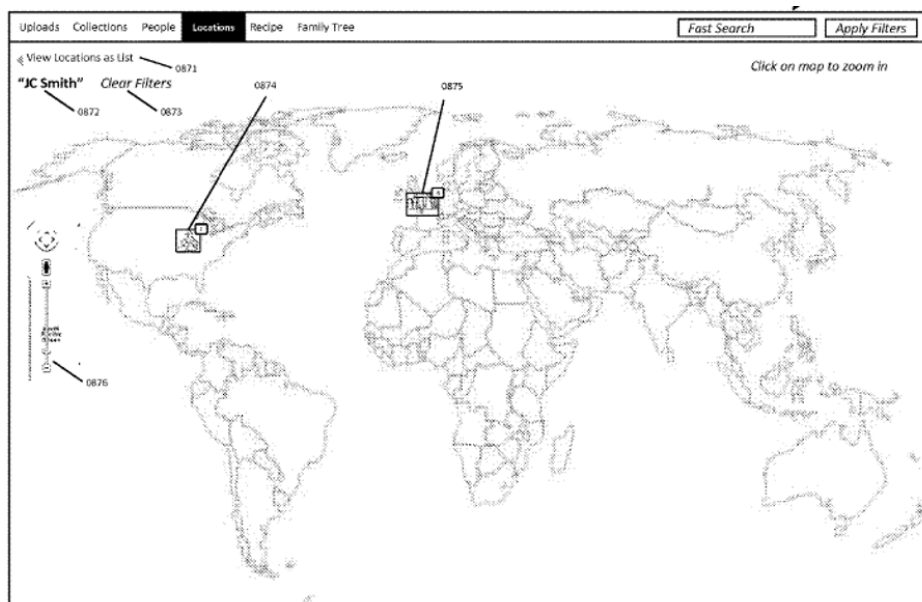
During a time of explosive growth in the field of digital photography, the inventors recognized that the then-existing technology failed to provide a way to easily organize, view, and display digital photos and videos. Appx240 (1:35–51); Appx245 (12:58–62); Appx246 (13:1–7).<sup>1</sup> While prior systems like Facebook, Flickr, Shutterfly, and other social media and specialty sites provided some organization functionality, they all suffered from the same inability to easily organize and navigate the expanding volume of digital files. Appx240 (1:43–51).

The MemoryWeb Patents address the limitations of prior photo management systems by disclosing and claiming novel methods for organizing and displaying digital files “allow[ing] people to organize, view, preserve and share these files with all the memory details captured, connected, and vivified via an interactive interface.” Appx240 (1:56–60). The patents disclose and claim novel and specific navigation pathways through a variety of “views” with different content in order to “save a user significant time, provide significant information with minimal screen space, and provide an appealing and customizable interface that will enhance the user experience.” Appx240 (2:51–55).

---

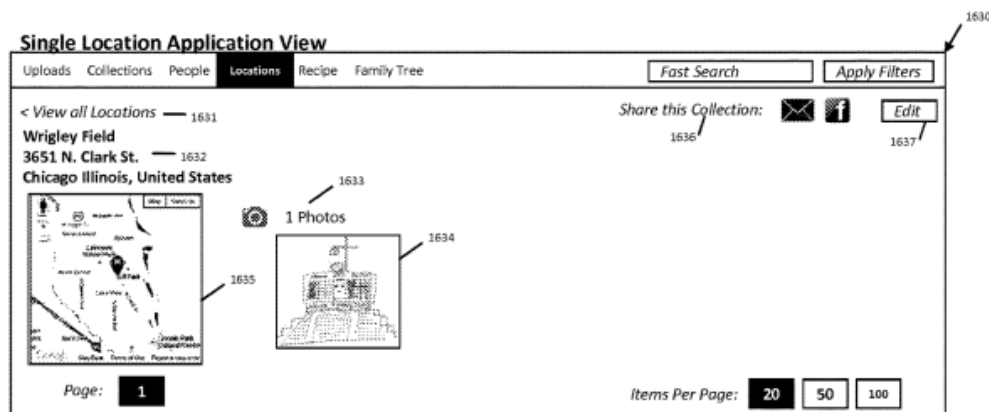
<sup>1</sup> The MemoryWeb Patents share the same specification.

For example, the MemoryWeb Patents disclose an interactive map view having individual or groups of photos displayed “as photo thumbnails . . . on the map.” Appx254 (29:32–39).



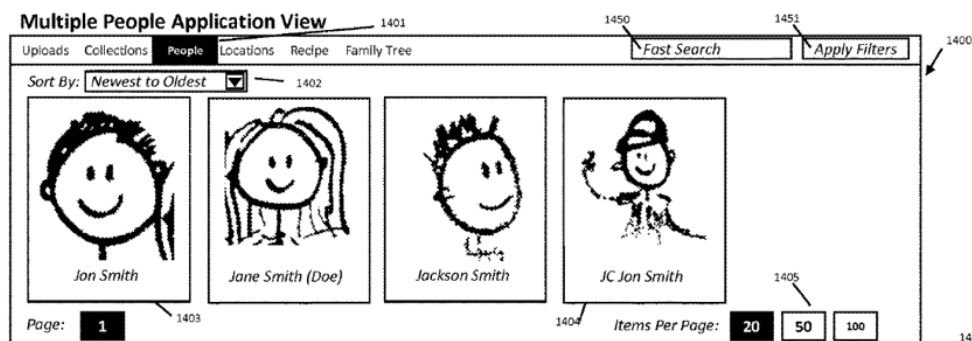
Appx230 (FIG. 41)

Accordingly, a user can select a thumbnail to see all of the photos from the same location. Appx254 (29:34–36). The patents disclose a separate “location view” which displays the “individual location name” and “[t]humbnails of each Digital File within the specific collection.” Appx251 (24:22–28).



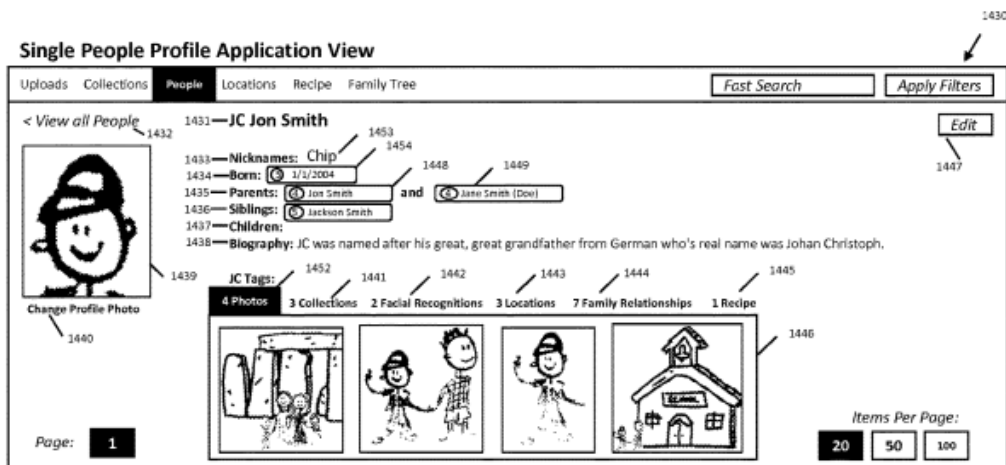
Appx223 (FIG. 34) (cropped)

The MemoryWeb Patents also disclose a “people view” which displays a thumbnail of each person’s face along with their name. Appx250 (22:43–57).



Appx221 (FIG. 32) (cropped)

From within the people view, a user can select an individual’s thumbnail and navigate to a “person view” that includes the person’s name, a profile photo, and photos associated with that person. Appx250-251 (22:63–23:20).



Appx221 (FIG. 32) (excerpted)

These and other views containing specific content are interconnected in novel ways that allow users to intuitively navigate their web of memories.

### 1. The ‘228 Patent

The ‘228 Patent claims methods for a user to intuitively view their organized digital files in multiple connected views. Appx313 (1:20–24). Claim 1 recites “causing a map view to be displayed” that includes “an interactive map” and two “location selectable thumbnail image[s]” at different locations on the interactive map. Appx330 (35:33–39). This map view is displayed “responsive to a first input.” *Id.*

Claim 1 recites two additional views that can be displayed based on selections in the map view. First, a “first location view” is displayed “responsive to an input” indicative of selecting a thumbnail at a first location in the map view. Appx330 (35:40–49). The first location view includes “a first location name” and “a

representation of at least a portion of one digital file in a first set of digital files” where “the first set of digital files including digital files [is] associated with the first location.” *Id.* Second, and similarly, a “second location view” is displayed “responsive to an input” indicative of selecting a thumbnail at a second location in the map view, where a second set of digital files is associated with the second location. Appx330 (35:50–60).

The particular navigation of claim 1 of the ‘228 Patent also recites causing a “people view” to be displayed “responsive to a second input” subsequent to the first input. Appx330 (35:61–36:11). The claimed people view includes at least two thumbnails which contain an image representing the face of the first and second person, respectively. *Id.* The people view also displays the names of the first and second persons adjacent to the first and second thumbnails, respectively. *Id.*

Dependent claim 18 recites displaying a “first person view” that includes “the first name” and “a representation of each digital file in the third set of digital files.” Appx331 (38:7–13). The first person view is displayed “responsive to an input that is indicative of a selection of the first person selectable thumbnail image” in the people view. *Id.*

## **2. The ‘658 Patent**

Claim 1 of the ‘658 Patent is similar to claim 1 of the ‘228 Patent in that it recites displaying “a map view” including two selectable thumbnails at different

locations on an interactive map. Appx257 (35:24–53). Claim 1 of the ‘658 Patent differs from the ‘228 Patent in that it additionally recites that the map view includes first and second count values partially overlapping respective ones of the selectable thumbnails. *Id.* Claim 1 of the ‘658 Patent further differs from the ‘228 Patent in that it additionally recites “displaying an application view” including “a plurality of selectable elements . . . including a location selectable element.” Appx257 (35:20–23). The map view is displayed “responsive to a click or tap of the location selectable element.” Appx257 (35:24–26).

Dependent claim 5 is directed to displaying a “people view” responsive to selecting a people selectable element in the application view and includes first and second person selectable thumbnails and two names displayed adjacent to respective thumbnails. Appx257 (36:28–49). Dependent claim 7 recites a “first person view” that is almost identical to claim 18 of the ‘228 Patent that is displayed responsive to a selection of the first person selectable thumbnail in the people view. Appx257 (36:56–62).

## **B. IPR2022-00221 (‘228 Patent)**

### **1. IPR Proceedings**

Samsung challenged claims 1-19 of the ‘228 Patent based on a single ground: obviousness over Okamura in view of Belitz. Appx7101.

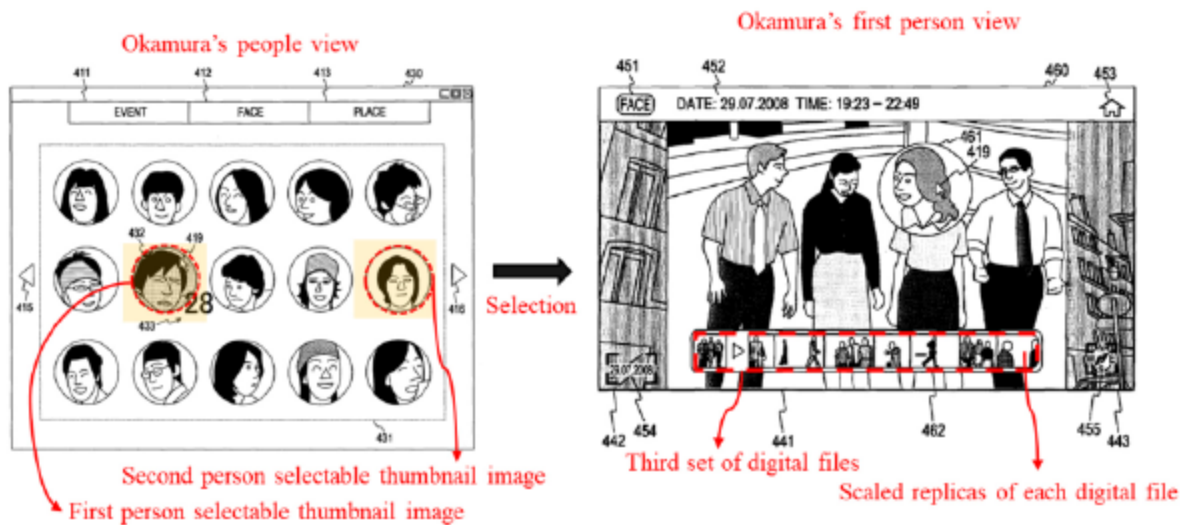
**a) Claim Construction Positions**

Samsung initially asserted in its Petition that “no formal claim constructions are necessary.” Appx7101–7102.

MemoryWeb proposed two claim constructions. First, MemoryWeb argued that the proper construction of the phrase “responsive to” requires a direct cause-effect relationship. For example, in claim 1, the proper construction required that the second input directly causes the features of the people view to be displayed. Appx9681–9683. Similarly, for claim 18, the proper construction required that an input in the people view directly causes the first person view to be displayed. Appx9687–9689. Second, MemoryWeb argued that the people view should be construed to require that the first and second name features be displayed simultaneously. Appx9684–9687.

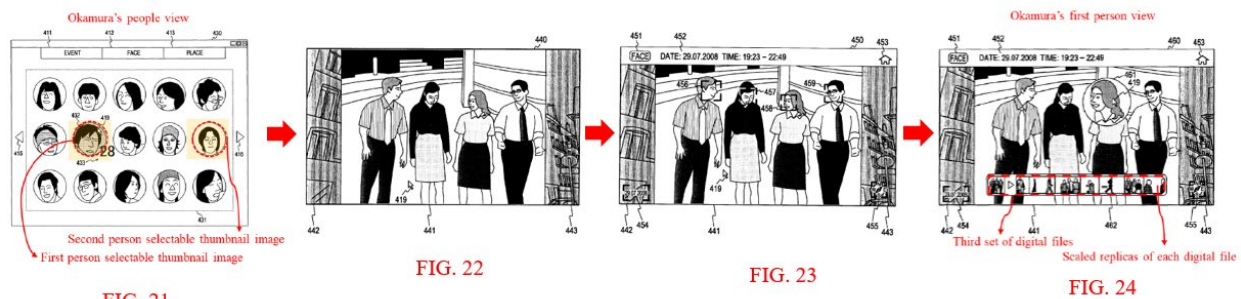
MemoryWeb demonstrated that Okamura does not disclose the claimed people view under either of these constructions because it (i) fails to display the name features “responsive to” the alleged second input, and (ii) never displays both names at the same time. Appx9690–9697.

MemoryWeb also demonstrated that contrary to Samsung’s suggestion, in Okamura, a selection in FIG. 21 (the alleged people view) does not cause FIG. 24 (the alleged person view) to be displayed.



Appx7109 (annotating Appx7755 (FIG. 21) and Appx7758 (FIG. 24))

Okamura requires multiple intervening inputs and additional views between the alleged people (FIG. 21) and person (FIG. 24) views, including the views shown in FIGS. 22 and 23. Appx9731–9733.



Appx909-912 (FIGS. 21-24)

In its Reply, Samsung altered its original position that no construction was necessary and proposed construing “responsive to” to merely require that the second event happens “subsequent to” the first event “based on a combination of user interaction and software implementation.” Appx10171.

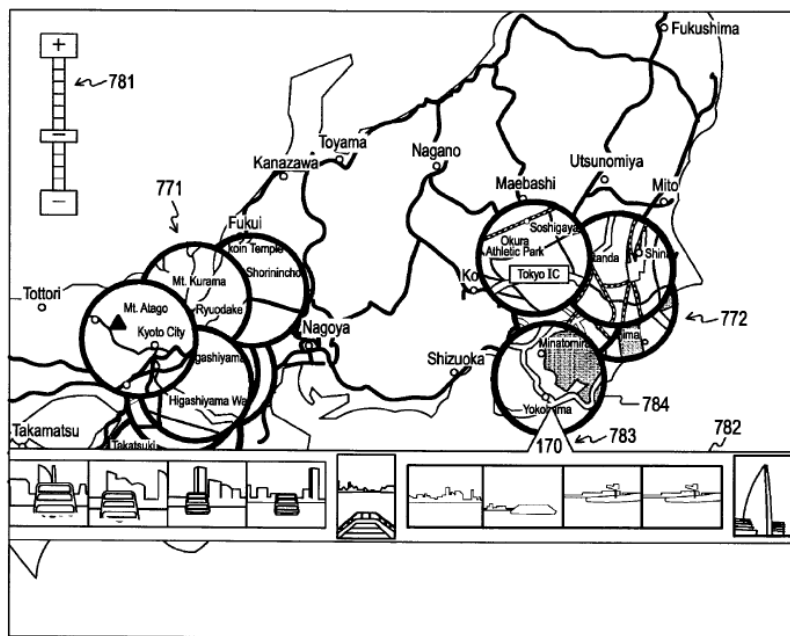


Samsung conceded that Okamura’s people view only displayed a name in connection with hovering the mouse over a thumbnail rather than directly “responsive to” the input identified in the Petition. Appx10179. With respect to displaying both names simultaneously, Samsung also conceded that Okamura does not disclose that feature (Appx10179–10181) but argued that the people view should be construed so as to not require that the first name and second name be displayed simultaneously (Appx10172–10174).

**b) MemoryWeb’s Argument That a Skilled Artisan Would Not Combine Okamura and Belitz**

MemoryWeb explained that a skilled artisan would not combine Okamura and Belitz because Okamura disparages prior art systems that organized photos using a single map. Appx9705–9712. Specifically, Okamura teaches that if a map is zoomed out to show multiple countries or continents, the user cannot see where photos were taken within a relatively small area (e.g., Tokyo). Appx9707. Conversely, when the map is zoomed in on a specific location, Okamura’s map no longer shows other regions of the world. *Id.*

Okamura solved this problem by using so-called “cluster maps,” which are miniature versions of maps with varying scales. Appx9707–9708. An example of these cluster maps overlaid on a background map is shown below:



Appx7775 (FIG. 41)

MemoryWeb explained that in view of these teachings, a skilled artisan would not have been motivated to modify Okamura to eliminate its cluster maps invention and revert to the scaling problems it disparaged. Appx9705–9712.

## 2. The Board's Decision

The Board upheld the patentability of claims 18 and 19 but found that claims 1-17 were unpatentable as obvious over Okamura and Belitz. Appx10.

The Board determined that claims 18 and 19 were not unpatentable because Samsung failed to show how selecting a thumbnail in Okamura's people view would result in the display of Okamura's first person view. Appx94. Samsung did not cross-appeal this determination.

The Board declined to resolve the parties' "responsive to" claim construction. Appx67–68. Instead, the Board found that the claim does not require "display of a first name associated with a first person responsive to a second input." Appx67. The Board also construed the "people view" such that the claim "do[es] not require that the first name and second name be displayed in the same view." Appx69. The Board then found that Okamura discloses the claimed people view under these broad claim constructions. Appx80–81.

With respect to combining Okamura and Belitz, the Board found that "Belitz does not suffer from the same geographical deficiencies as the references discredited by Okamura in that the proposed combination can be achieved without overlap." Appx90. However, the Board never addressed the scaling issues in the related art that Okamura disparaged. The Board also found that "even if we assume that none of Belitz's images are maps, the proposed combination has other advantages that a person of ordinary skill in the art would have been capable of weighing against any benefits lost." Appx90. The Board, however, made no specific finding as to what those "other advantages" are. *Id.* The Board also dismissed the fact that Okamura's cluster maps would be eliminated in the combination "because Petitioner's rational [sic] in support of the proposed combination is not based on the substitution of these components." Appx90–91.

## **C. IPR2022-00222 (‘658 Patent)**

### **1. IPR Proceedings**

Samsung challenged the ‘658 Patent on five grounds: (1) obviousness over Okamura and Belitz (claims 1-15); (2) obviousness over Okamura, Belitz and Rasmussen (claims 3-4); (3) obviousness over Okamura, Belitz, and Gossweiler (claims 6-12); (4) obviousness over Okamura, Belitz, and Yee (claims 8-9 and 11-12); and (5) obviousness over Okamura, Belitz, Gosseweiler and Yee (claims 8-9 and 11-12). Appx446. The Petition asserted that “no formal claim constructions are necessary.” Appx446–447.

#### **a) Claim Construction Positions**

Consistent with the ‘228 Patent proceeding, MemoryWeb argued that the phrase “responsive to” in claim 5 requires a cause-effect relationship between (1) a click or tap of the people selectable element in the application view and (2) displaying a people view including two thumbnails and two names. Appx4164–4172. Likewise, MemoryWeb argued claim 7 requires a direct cause-effect relationship between selecting a thumbnail in the people view and displaying the person view. *Id.* MemoryWeb also argued claim 5 requires that the people view include two names displayed simultaneously. Appx4172–4175.

MemoryWeb presented evidence that Okamura does not disclose a people view under either of these claim constructions. Appx4211–4215. Additionally, as it did in connection with the ‘228 proceeding, MemoryWeb demonstrated that

Okamura does not disclose transitioning directly from the alleged people view to the alleged person view; instead, there are multiple intervening inputs and views. Appx4216–4222; *supra* § B.1.

In its Reply, Samsung argued that “responsive to” merely requires the second event to happen “subsequent to” the first event “based on a combination of user interaction and software implementation” and that “nothing in the ’658 patent requires both names to be visible together to the user at all times.” Appx5719–5727. For claim 7, Samsung relied on its broad construction of “responsive to” that the first person view be displayed subsequent to a click or tap in the people view. Appx5742–5743.

**b) MemoryWeb’s Argument That a Skilled Artisan Would Not Combine Okamura and Belitz**

As it did in the ‘228 Patent proceeding, MemoryWeb explained that a skilled artisan would not combine Okamura and Belitz because the resulting combination has the exact same scaling problems as the related art disparaged by Okamura. Appx4185–4191; *supra* § B.2.

**2. The Board’s Decision**

The Board upheld the patentability of claims 14 and 15<sup>2</sup> but found that claims 1-13 were unpatentable as obvious. Appx106.

---

<sup>2</sup> Samsung did not cross-appeal these findings, so they are not at issue in this appeal.

The Board found that it would have been obvious to combine Okamura and Belitz in two ways: (1) replacing Okamura's cluster maps in FIG. 41 with Belitz's thumbnails (Appx140) and (2) replacing Okamura's entire map view in FIG. 41 with Belitz's map (Appx143). In response to MemoryWeb's argument that Okamura teaches away, the Board stated that it did "not agree . . . that Belitz's thumbnails are subject to the same disadvantages as Fujiwara and Takakura, that present a background map with generic markers, because Belitz's thumbnails are not generic." Appx141 (citing Appx460).

Unlike the '228 Decision in which the Board declined to address the claim construction dispute surrounding the "responsive to" term, for the '658 Patent, the Board construed the phrase "responsive to" as requiring that the second event happen "subsequent to" the first event "based on a combination of user interaction and software implementation." Appx122. The Board also construed the "people view" in claim 5 to not require the "simultaneous display of the name of the first person and the name of the second person." Appx123. Based on these constructions, the Board found that "the intervening mouse roll-over required to display the first or second name does not preclude Okamura from meeting the limitations of claim 5 . . . because the claim does not preclude user interaction or software implementation." Appx157.

Despite the Board’s determination in the ‘228 Decision that Samsung failed to meet its burden for nearly identical claim language based on the same arguments, the Board found the opposite in the ‘658 Decision. Appx159. While the Board stated that its construction of “responsive to” was dispositive, it ignored MemoryWeb’s argument that Okamura does not satisfy the Board’s construction. Appx6471. The Board then refused to correct this oversight in its Rehearing Decision. Appx183.

## **SUMMARY OF THE ARGUMENT**

I. The MemoryWeb Patents disclose and claim a “people view” that simultaneously displays first and second thumbnails and corresponding first and second names. Notwithstanding the plain language of the claims, the Board construed the people view such that both thumbnails and both names do not need to be displayed simultaneously in the “people view.” The Board’s construction ignored the surrounding claim language and is not consistent with the specification. The Board also erred in construing the phrase “responsive to” and related claim language. For the ‘658 Patent, the Board construed “responsive to” to merely require that the second event be subsequent to the first event based on a combination of user interaction and software implementation. This construction is at odds with the plain meaning of “responsive to,” the surrounding claim language, and the specification.

II. The Board’s findings that Okamura discloses the people view in the MemoryWeb Patents should be reversed because they are predicated on its faulty claim constructions. When Okamura’s alleged people view is initially displayed, no names are shown. The only way to cause a name to appear is to mouse-over a thumbnail, but this means that (i) only one name can be displayed at a time and (ii) the name is not displayed responsive to the specified input. Okamura therefore does not disclose displaying a people view “responsive to” the specified input, nor does it ever display a people view with two names displayed simultaneously.



III. Likewise, the Board’s finding that Okamura discloses displaying the “first person view” in claim 7 of the ‘658 Patent should be reversed because it is based on its erroneous construction of “responsive to.” But even if the Court affirms the Board’s construction, that alone is not enough to affirm because the Board’s findings in the ‘658 Decision are irreconcilable with its findings upholding claim 18 in the ‘228 Decision. These claims are nearly identical, and Samsung advanced virtually identical arguments in both proceedings. Under the doctrine of issue preclusion, the Board’s findings for the ‘228 Patent—which Samsung did not cross-appeal—are final and require reversal of the Board’s inconsistent findings. At minimum, the Board’s inconsistent findings are arbitrary and capricious and are also unsupported by substantial evidence, which warrant vacatur and remand.

IV. The Board erred in finding that it would have been obvious to combine Okamura and Belitz. As the Board acknowledged, Okamura discredits “related art” that used markers on a map to show where photos were taken. Okamura describes scaling problems in the related art and proposes to solve those problems with so-called “cluster maps,” which are miniature maps with varying scales. Modifying Okamura with Belitz eliminates Okamura’s cluster maps and reintroduces the same scaling problems as the related art. The Board ignored these facts and addressed different issues with the related art that neither Okamura nor MemoryWeb discussed. The Board’s failure was an abuse of discretion warranting remand.

## STANDARD OF REVIEW

Claim constructions are reviewed *de novo* and factual findings regarding extrinsic evidence are reviewed for substantial evidence. *Praxair Distrib., Inc. v. Mallinckrodt Hosp. Prods. IP Ltd.*, 890 F.3d 1024, 1031 (Fed. Cir. 2018). The *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005), claim construction standard applies to these IPR proceedings. *Personalized Media Commc'ns, LLC v. Apple Inc.*, 952 F.3d 1336, 1340 n.2 (Fed. Cir. 2020).

This Court reviews the Board's legal conclusions on obviousness *de novo* and its underlying factual findings for substantial evidence. *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1064 (Fed. Cir. 2018). The Court will reverse decisions where the Board's factual findings lack substantial evidence. *See, e.g., Univ. of Strathclyde v. Clear-Vu Lighting LLC*, 17 F.4th 155 (Fed. Cir. 2021). "A finding is supported by substantial evidence if a reasonable mind might accept the evidence to support the finding." *Polaris*, 882 F.3d at 1064.

Collateral estoppel is reviewed *de novo*. *Google LLC v. Hammond Dev. Int'l, Inc.*, 54 F.4th 1377, 1380 (Fed. Cir. 2022).

This Court reviews the Board's decisions under the Administrative Procedure Act ("APA") to determine whether the Board's decision is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." *In re Lee*, 277 F.3d 1338, 1342 (Fed. Cir. 2002) (quoting 5 U.S.C. § 706(2)).

## **ARGUMENT**

### **I. THE BOARD ERRED IN CONSTRUING THE CLAIMS OF THE MEMORYWEB PATENTS**

#### **A. The Board Erred in Construing the “People View” to not Require That Two Names and Two Thumbnails Be Displayed Simultaneously**

The plain and ordinary meaning of the “people view” in claim 5 of the ‘658 Patent and claim 1 of the ‘228 Patent requires that: (1) the people view includes a first thumbnail, a first name, a second thumbnail, and a second name; (2) the people view must simultaneously display thumbnail and name information for at least two people, and (3) the people view simultaneously display each name with a thumbnail.

Contrary to this straightforward construction, the Board improperly construed the “people view” in both proceedings. In the ‘228 Decision, the Board construed the “people view” as “not requir[ing] that the first name and second name be displayed in the same view.” Appx68–69. In the ‘658 Decision, the Board found that the claims do not “require[] the simultaneous display of the name of the first person and the name of the second person.” Appx123. The Board’s broad constructions depart from the plain and ordinary claim language and cannot stand.

#### **1. The People View Requires a First Thumbnail, First Name, Second Thumbnail, and Second Name**

The “people view” claimed in MemoryWeb’s patents is a single view requiring a first thumbnail, first name, second thumbnail, and second name.

Claim 5 of the ‘658 Patent requires that “displaying the people view includes displaying”:

- (i) a first person selectable thumbnail image;
- (ii) a name associated with the first person;
- (iii) a second person selectable thumbnail image; *and*
- (iv) a name associated with the second person.

Appx257 (36:33–49) (emphasis added). Similarly, claim 1 of the ‘228 Patent requires displaying a “people view” including:

- (i) a first person selectable thumbnail image;
- (ii) a first name associated with the first person;
- (iii) a second person selectable thumbnail image; *and*
- (iv) a second name associated with the second person.

Appx330 (35:62–36:11) (emphasis added). Both claims recite a single view with a list of four features including a first thumbnail, a first name, a second thumbnail, *and* a second name. All four features—including the first name and second names—must be displayed in the same view to form a “people view.” Indeed, Samsung’s expert agreed that the people view includes “two [thumbnail] images, and each one of them having a [name] caption.” Appx9946 (51:9–52:13); *see also* Appx4759 (105:4–12), Appx4781–4782 (192:17–196:18).

The first dispute was whether both thumbnails and names must be displayed simultaneously in the view. In the ‘228 Decision, the Board found that “claim 1 does not specify display of features of the people view” and that the claims “do not require that the first name and second name be displayed in the same view.” Appx69. Similarly, in the ‘658 Decision, the Board found that the claim language “does not require that the first and second names be displayed at the same time.” Appx124. In other words, the Board found that the first name and second name can be displayed at some point during the operation of the method, but there is no requirement that they be displayed at the same time. This interpretation is wrong because it is inconsistent with the surrounding claim language and the purpose of the invention.

## **2. The Board’s Construction Conflicts with Contextual Claim Language and the Purpose of the Inventions**

The MemoryWeb Patents claim a myriad of views, each of which comprise different features, including the “map view,” “first location view,” “second location view,” “people view,” “first person view,” and “second person view.” Appx330–331 (35:33–34, 35:40–42, 35:50–53, 35:61–62, 38:7–13, 38:14–19); Appx257–258 (35:24–26, 35:54–56, 35:64–66, 36:30–33, 36:58–59, 37:6–7). The “people view” is distinguished from these other views at least based on its defining features: the first and second thumbnails and first and second names. A view is not a “people view” unless it includes at least these four features. Appx10033 (¶73); Appx4622 (¶131), Appx4625 (¶¶137-139).

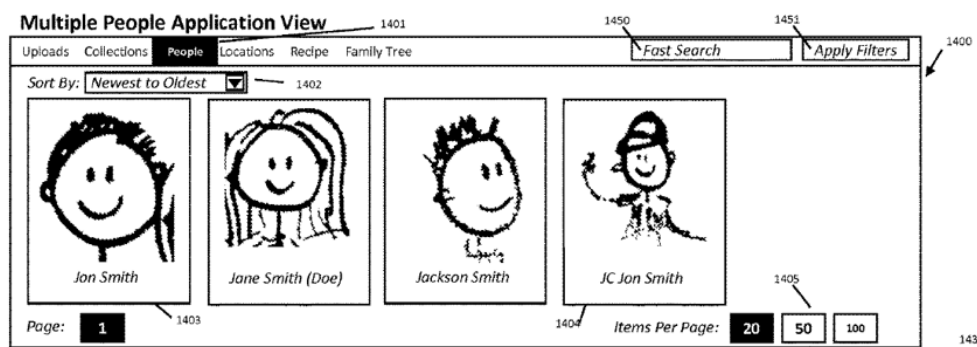
The words of the claims, including “and,” “adjacent to,” and “responsive to,” require the simultaneous display of both names. *Phillips*, 415 F.3d at 1314. For example, both claims recite a conjunctive list of features including a first thumbnail, a first name, a second thumbnail, **and** a second name. *Medgraph, Inc. v. Medtronic, Inc.*, 843 F.3d 942, 949 (Fed. Cir. 2016) (construing “and” as conjunctive). Due to the conjunctive claim language, all four features must be displayed in the same view at the same time to form a “people view.” The preamble, on the other hand, uses the term “or” to set forth a disjunctive list of features: “a plurality of (i) digital photographs, (ii) videos, **or** (iii) a combination of (i) and (ii).” Appx257 (35:14–15) (emphasis added). That is, the preamble claims three permutations: (1) photographs alone, (2) videos alone, or (3) photographs and videos. This broader listing stands in contrast to the “people view,” which uses the word “and.” If MemoryWeb intended for the “people view” to include only one name at a time—as the Board found—then it would have used the same disjunctive terminology to claim displaying (i) a first thumbnail, (ii) a first name, (iii) a second thumbnail, (iv) a second name, or (v) any combination of (i)–(iv). The use of the conjunctive term “and” rather than the disjunctive term “or” confirms that each of the features must be present together.

The claims also expressly require that the name be displayed “adjacent to,” and therefore simultaneously with, a thumbnail. Appx257 (36:38–40, 36:46–49); Appx330 (36:1–3, 36:9–11). Samsung’s expert admitted that the ‘658 Patent

requires “the *simultaneous* display of the first person selectable thumbnail image and the name associated with the first person” and (2) that “the name associated with the second person needs to be displayed *simultaneously* with the second person selectable thumbnail image.” Appx6712 (46:17–48:12) (emphases added); *see also* Appx4759 (105:4–12); Appx4781-4782 (192:17–196:18). Samsung’s expert similarly admitted that the ‘228 Patent requires that each name must be displayed “adjacent to,” and therefore simultaneous with, a thumbnail. Appx10721 (88:19–89:8).

Construing the “people view” to require the simultaneous display of both names is also consistent with the requirement that the four features of the people view be displayed “responsive to” a user input. *See also infra* § I.B. For example, the ‘658 Patent requires displaying both names “responsive to” a click or tap of a people selectable element in another view. Appx4622 (¶130). Similarly, the ‘228 Patent requires displaying both names “responsive to” a second input that is subsequent to a prior input. *Infra* § I.B; Appx10034 (¶77). A construction that allows for the names to be displayed at different times (including never at the same time) conflicts with the requirement to display both names “responsive to” a particular event – the user input (‘228 Patent) or click or tap (‘658 Patent).

MemoryWeb’s construction is also consistent with the MemoryWeb Patents’ disclosure of a “people view” which displays a thumbnail of each person’s face along with their name. Appx250 (22:43–57).



Appx221 (FIG. 32) (cropped)

The Board improperly rejected MemoryWeb’s reliance on the specification as allegedly importing limitations into the claims. Appx68; *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1340 (Fed. Cir. 2001) (rejecting argument that claim construction imported a limitation from the specification because the claims must be read in view of the specification).

Furthermore, in construing claims, the Court also “looks to whether the specification read as a whole suggests that the very character of the invention requires the limitation be a part of every embodiment.” *Alloc, Inc. v. Int’l Trade Com’n*, 342 F.3d 1361 (Fed. Cir. 2003). The Board did not do that in these proceedings. Here, the specification, when read as a whole, leads to the conclusion that the claimed inventions require the simultaneous display of each of the names and thumbnails in the people view. The specification, for example, teaches that what



was needed was “a medium that allows people to organize, view, preserve and share [digital] files with all the memory details captured, connected and vivified via an interactive interface.” Appx240 (1:57–60). The specification teaches that “[s]uch a solution would allow digital files . . . to tell a full story . . .” *Id.* (1:60–61). The views display the digital files with tagged attributes, such as a person’s name. Appx241–242 (4:39–40, 5:54–56). This is also consistent with the intended purpose of the inventions. The inventions “save a user significant time, provide significant information with minimal screen space, and provide an appealing and customizable interface that will enhance the user experience.” Appx246 (13:19–23); Appx4626–4627 (¶141); Appx319 (13:31–35).

The Board’s construction, on the other hand, encompasses displaying a first name on its own, then at some unspecified time in the future (e.g., 1 hour later, 1 year later, etc.) displaying a second name on its own and in a view completely disassociated from images of the named person. This absurd result is contrary to the MemoryWeb Patents’ objective of saving the user time while telling the entire story of a user’s memories. Appx4626–4627 (¶¶141–142). This is further evidence that MemoryWeb’s construction is correct. *See Trading Techs. Int’l, Inc. v. eSpeed, Inc.*, 595 F.3d 1340, 1354 (Fed. Cir. 2010) (rejecting construction that would “defy the invention’s goal”).

For all the foregoing reasons, the Board erred in broadly construing the people view. The Board’s unpatentability findings for claims 1-17 of the ‘228 Patent and claims 5-12 of the ‘658 Patent must be reversed because they are predicated on this erroneous claim construction. *Infra* § II.

**B. The Board Erred in Construing “Responsive To” to Mean “Subsequent To” Rather Than Requiring a Cause-Effect Relationship in the ‘658 IPR and Failing to Construe it in the ‘228 IPR**

The Board’s erroneous and inconsistent construction of “responsive to” also led the Board to improperly apply the prior art to both patents. Under the proper construction, the Board’s Decisions must be reversed, or at least vacated and remanded for further analysis.

The plain and ordinary meaning of “responsive to” in the ‘658 Patent claims requires a cause-effect relationship between a click or tap of a particular selectable element and displaying a particular view. Appx4622 (¶130), Appx4629–4630 (¶¶147–149). Likewise, the plain and ordinary meaning of “responsive to” in the ‘228 Patent claims requires a cause-effect relationship between a particular input and causing a particular view to be displayed. Appx10031 (¶67); Appx10034 (¶¶76–77).

The Board construed “responsive to” differently across the two proceedings. For the ‘658 Patent, the Board construed “responsive to” so that it “merely requires that the second event happen ‘subsequent to’ the first event based on a combination of user interaction and software implementation.” Appx122. For the ‘228 Patent, the

Board rejected MemoryWeb’s construction, but did not construe “responsive to.” Appx68. Instead, the Board found that, notwithstanding the express language of the claims, it did not need to construe “responsive to” because the ‘228 Patent does “not require display of a first name” responsive to the “second input.” *Id.*

The Board’s claim construction findings should be reversed. The plain meaning of “responsive to” and the contextual claim language require it to be construed as a cause-effect relationship such that the people view—including all of its features—must be displayed “responsive to” the required input.

**1. The Board Wrongly Equated “Responsive To” with “Subsequent To”**

Contrary to the Board’s construction, “responsive to” cannot have the same temporal meaning as “subsequent to.” The MemoryWeb Patents themselves expressly draw this distinction. Claim 1 of the ‘228 Patent recites “responsive to” four times and separately recites “subsequent to” to define a temporal relationship between the “first input” and “second input.” Appx330 (35:61–63). It is axiomatic that “[d]ifferent claim terms are presumed to have different meanings.” *Bd. of Regents of the Univ. of Tex. Sys. v. BENQ Am. Corp.*, 533 F.3d 1362, 1371 (Fed. Cir.

2008); Appx10709 (38:15–39:3). In this case, construing “responsive to” to mean “subsequent to” is improper.<sup>3</sup>

The Board relied on Samsung’s expert, Dr. Greenspun, to conclude that “responsive to” means “subsequent to.” However, in adopting Dr. Greenspun’s declaration testimony (Appx122), the Board ignored his unequivocal admission during cross-examination that “responsive to” does *not* mean “subsequent to.” Appx6705 (17:11–25); *see also* Appx4756 (92:3-13), Appx4784–4785 (205:9–207:13), Appx4753 (81:7–20). Dr. Greenspun agreed that “responsive to” requires a cause-effect relationship rather than a straight temporal sequence, just as MemoryWeb’s construction requires. *Id.* The Board inexplicably ignored these key admissions.

Further, the Board’s construction and treatment of “responsive to” create both illogical and inconsistent readings of the claims. While the Board’s construction requires that the second event occur “subsequent to” the first event, the Board also stated that its construction does *not* “allow[] for an infinite number of intervening events.” Appx122. That is, the Board’s construction allows for *some* intervening inputs without destroying the “responsive to” relationship while placing an unstated cap on the number of such inputs. Indeed, as set forth in further detail below, the

---

<sup>3</sup> While the ‘658 Patent claims do not include “subsequent to,” “responsive to” should be construed the same for both patents. Samsung agreed that the issue is “very similar” for both patents. Appx6931 (10:14–20); Appx6936 (15:6–13).

Board seemingly reached inconsistent decisions in the ‘228 and ‘658 Decisions concerning the number of permitted intervening user inputs. *Infra* § III.

The Board’s construction also refers to “user interaction” but the claims already recite the user interaction (i.e., input or click or tap) that is required to cause the second event. Appx122. The Board’s use of “user interaction” introduces unnecessary ambiguity in the claim – is the “user interaction” different than or the same as the user input or click or tap? Rather than the untenable result created by the Board, the plain meaning of “responsive to” requires a cause-effect relationship rather than a temporal sequence.

## **2. The Claims, When Read as a Whole, Require a Cause-Effect Relationship**

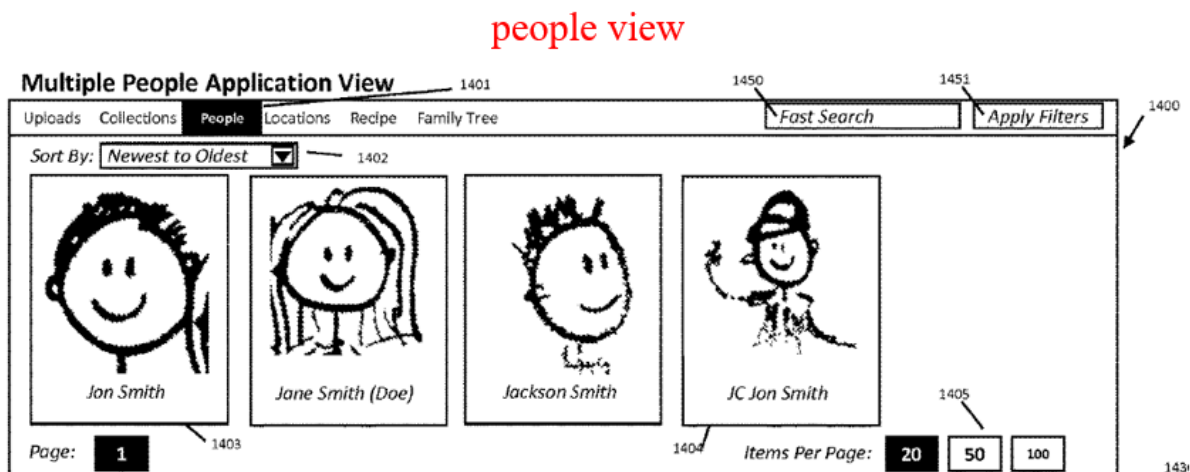
As discussed above, the MemoryWeb patents disclose and claim an innovative way to organize and navigate large numbers of digital files in order to tell the story of a user’s memories using multiple connected views. That navigation sets forth a particular set of steps or flow through the system, and at each particular point, different information is presented to the user. The claims capture this by identifying the particular views and information appearing as the user navigates the system. The Board’s overbroad construction of “responsive to” failed to consider the overall structure of the claims, which recite a particular flow through various views with different content.

In the ‘658 Patent, claim 1 recites, *inter alia*, displaying an “application view” having selectable elements. Dependent claim 5 adds that a “people view” is displayed “responsive to a click or tap of the people selectable element” in the application view. Appx6710–6711 (39:4–42:15); Appx4622 (¶130). Dependent claims 7 and 10 add that a “person view” is displayed “responsive to a click or tap” of a selectable thumbnail in the people view. Appx4629–4630 (¶¶147–149). Similarly, claim 1 of ’228 Patent recites, *inter alia*, causing a people view to be displayed responsive to a second input that is subsequent to a first input that causes a map view to be displayed. Appx330 (35:33–34, 35:61–63). Claim 18 recites causing a first person view to be displayed responsive to a selection in the people view. Appx331 (38:8–13). Yet under the Board’s construction, displaying the first person view would be considered “responsive to” the first input because it is subsequent to the first input based on a combination of user interaction and software implementation. That is not how the claim is written: each person view is displayed responsive to an input in the people view – *not* the first input that displays the map view. “Responsive to” should therefore be construed consistent with the surrounding claim limitations to require a cause-effect relationship. *ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1088 (Fed. Cir. 2003) (construing claims based on the “plain language and surrounding context of the claims themselves”).

### 3. The Board's Construction is Unsupported by the Specification

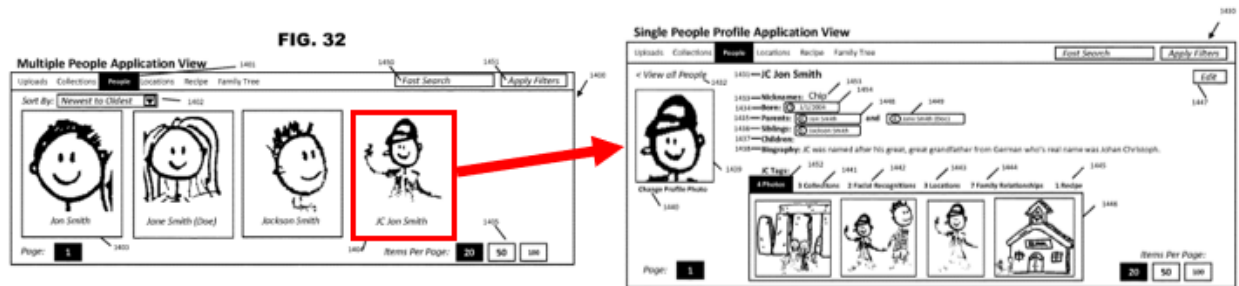
The Decisions fail to identify anything in the specification supporting the Board's broad construction of "responsive to." Appx67–68; Appx121–122. While the Board noted that "nothing in the specification precludes" its broad construction, the Board acknowledged "nothing in the specification . . . requires any user input beyond the second input to display the first name." Appx68. In short, MemoryWeb's construction is consistent with the specification while the Board's is not. *Wi-Fi One, LLC v. Broadcom Corp.*, 887 F.3d 1329, 1346 (Fed. Cir. 2018) (holding that claims must be construed "to be faithful to the invention disclosed in the specification").

The specification is replete with examples illustrating the cause-effect relationship required by the claims. For instance, in FIG. 32, "selecting 'People' (1401)" directly results in the people view 1400 being displayed. Appx250 (22:43–55); Appx4623–4624 (¶134); Appx5967-5968 (63:7–64:5); Appx68.



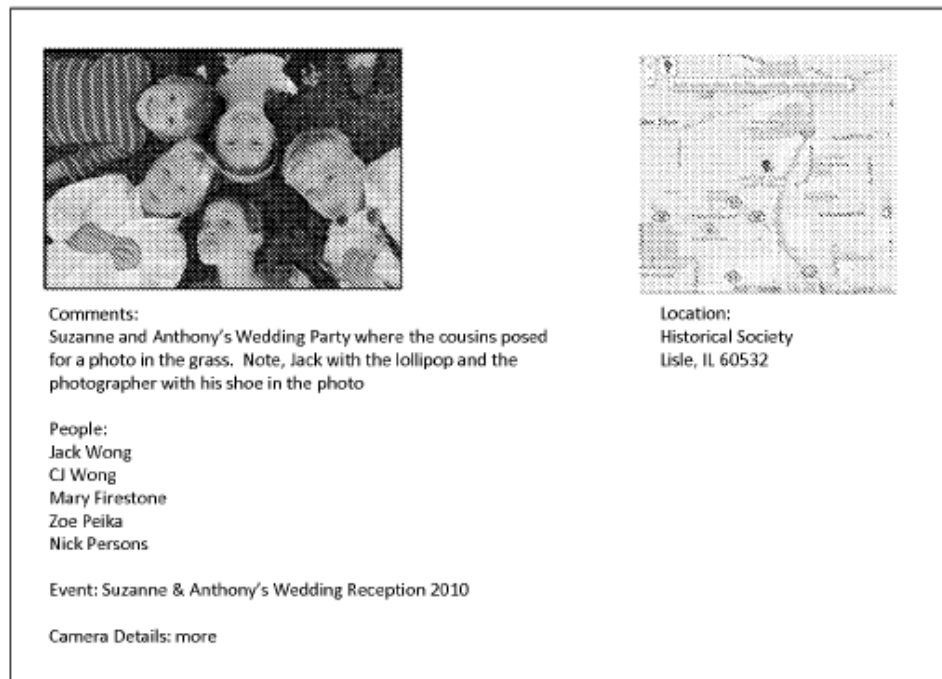
Appx221 (FIG. 32) (cropped)

Similarly, selecting a thumbnail in the people view (e.g., for JC Jon Smith) directly causes a person view to be displayed. Appx250–251 (22:63–23:10, 23:18–20); Appx4629–433 (¶¶147–154).



Appx221 (FIG. 32) (annotated)

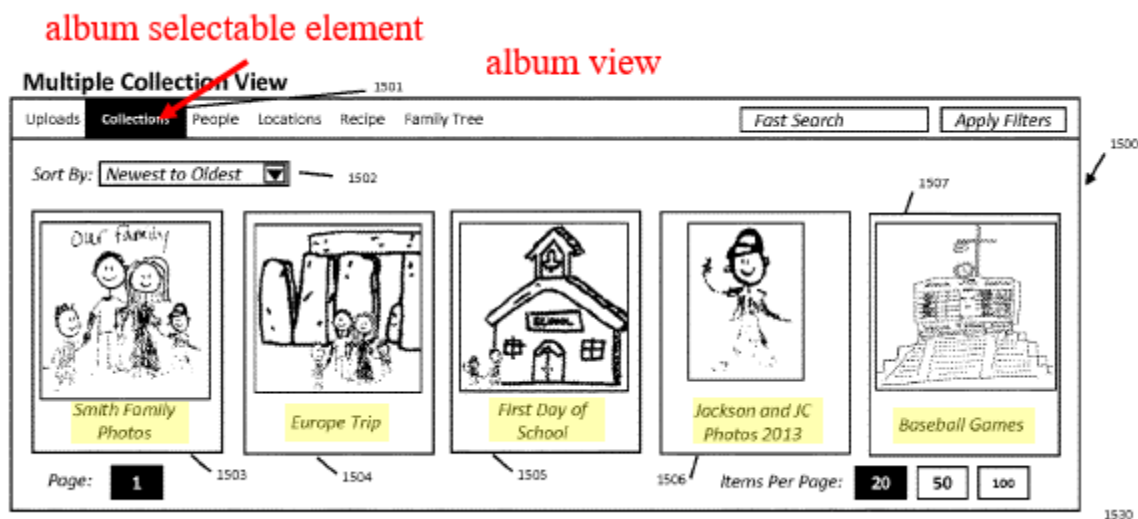
As another example, the specification discloses that selecting an image in any view causes a detail view to be displayed, as dependent claim 3 requires. Appx240–242 (2:64–65, 5:64–6:1); Appx257 (36:15–20) (claim 3); Appx4619–4620 (¶¶126–127).



Appx191 (FIG. 2)



As another example, the specification discloses that selecting an album selectable element directly causes an album view to be displayed. Appx251 (23:35–40); Appx258 (37:21–26) (claim 13); Appx4635–4636 (¶¶158–159).



Appx222 (FIG. 33) (cropped and annotated)

These examples confirm that “responsive to” requires a cause-effect relationship between a specific input in a specific view displaying another view.

The specification, when read as a whole, confirms that the claims require that the display of each of the names and thumbnails in the people view have a cause-effect relationship with the claimed input. As discussed above, the specification teaches that what there was a need for a tool that would allow people to interactively view digital files “with all the memory details captured, connected and vivified.” Appx240 (1:57–60). The specification also teaches that its inventive solutions allow the digital files “to tell a full story” *Id.* (1:60–61). This is consistent with the intended

purpose of the inventions – to save users time, provide significant information with minimal screen space, and enhance the user experience. Appx246 (13:19–23); Appx4626–4627 (¶141); Appx319 (13:31–35).

In the ‘228 Decision, the Board rationalized its construction by inaccurately characterizing MemoryWeb’s proposal as being “based on an exemplary embodiment disclosed in the ‘228 patent” – Figure 32 – that did not limit the claims. Appx68. However, the Board’s over-simplified rationalization was wrong and ignored the entirety of the evidence presented by MemoryWeb. *Provisur Techs., Inc. v. Weber, Inc.*, 50 F.4th 117, 124 (Fed. Cir. 2022) (vacating decision where the Board mischaracterized the patent owner’s arguments). MemoryWeb never based its argument on the Figure 32 embodiment alone. Instead, MemoryWeb based its construction on the plain meaning of “responsive to,” as confirmed by the specification and contextual claim language. *Supra* §§ I.B.1–I.B.2; *Phillips*, 415 F.3d at 1315 (the specification is the single best guide to the meaning of a disputed term).

#### **4. The Board Wrongly Considered Enablement in the ‘658 Decision**

In the ‘658 Decision, the Board stated that, under Memory Web’s construction, “the full scope of the claim 1 is not enabled for large sets of photographs or videos,” and MemoryWeb’s construction “would invalidate the claim.” Appx121 (citing *Alcon Research, Ltd. v. Apotex Inc.*, 687 F.3d 1362, 1368

(Fed. Cir. 2012)). This was error because enablement should not be considered in claim construction and because there is zero evidence supporting the Board’s finding that the claims are not enabled under MemoryWeb’s construction. The Board’s reliance on *Alcon* was misplaced as claim construction was not at issue in that case. Appx17 (citing *Alcon*, 687 F.3d at 1367–68).

The Board’s enablement analysis in the ‘658 Decision was irrelevant to the claim construction analysis. A 35 U.S.C. § 112 analysis is only performed when, after examining the full intrinsic record of the patent, the term at issue is ambiguous. *Phillips*, 415 F.3d at 1327 (“While we have acknowledged the maxim that claims should be construed to preserve their validity, we have not applied that principle broadly, and we have certainly not endorsed a regime in which validity analysis is a regular component of claim construction.” (citation omitted)); *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 911 (Fed. Cir. 2004) (stating that “unless the court concludes, after applying all the available tools of construction, that the claim is still ambiguous, the axiom regarding the construction to preserve the validity of the claim does not apply”). The Board did not find that “responsive to” is ambiguous, Samsung did not argue it was ambiguous, and neither party presented any evidence or argument that the “responsive to” limitation is not enabled.

In fact, nothing in the record supports the Board’s finding that the claims are not enabled under MemoryWeb’s construction. Appx121. Neither expert opined that

the claims are not enabled under MemoryWeb's construction. While the Board cites a discussion during the oral hearing, it does not cite any record evidence. *Id.* During oral argument, the panel asked counsel about the impact of MemoryWeb's construction on the requirement in claim 1 that a location view including "a scaled replica of each of the digital photographs and videos in the first set" is displayed "responsive to a click or tap of the first location," where the first set includes "all of the digital photographs and videos associated with the first geotag." Appx6946–6948 (25:16–27:14). MemoryWeb's counsel acknowledged that there may be situations where even though all of the photos are found within the display, the physical size of the display may limit how many photos can be shown at a given time. Appx6947 (26:3–14). MemoryWeb's expert addressed this scenario and testified that a person of skill in the art would recognize that while many instances exist in which all of photos appear on the display, there may be instances where due to varying display sizes (e.g., mobile phone versus computer monitor), that may not be the case. Appx5981–5982 (78:3–79:19); Appx5994 (90:10–15); Appx6948–6949 (27:3–28:10). However, those instances provide no basis for altering the plain meaning of the claims.

In sum, the Board erred by considering enablement in its claim construction analysis.

## 5. “Responsive To” Applies to All Elements of the “People View” in Claim 1 of the ‘228 Patent

In the ‘228 Decision, the Board rejected MemoryWeb’s construction of “responsive to,” but did not construe it. Appx68. Instead, the Board found that while claim 1 “requires that the people view includes a first name,” the claim “does not require that the first name be displayed ‘responsive to’ the second input.” Appx67–68. In other words, the Board found that even if “responsive to” requires a cause-effect relationship, that is irrelevant because the “first name” does not need to be displayed “responsive to” the second input. *Id.* In so doing, the Board erred by failing to account for the surrounding claim language.

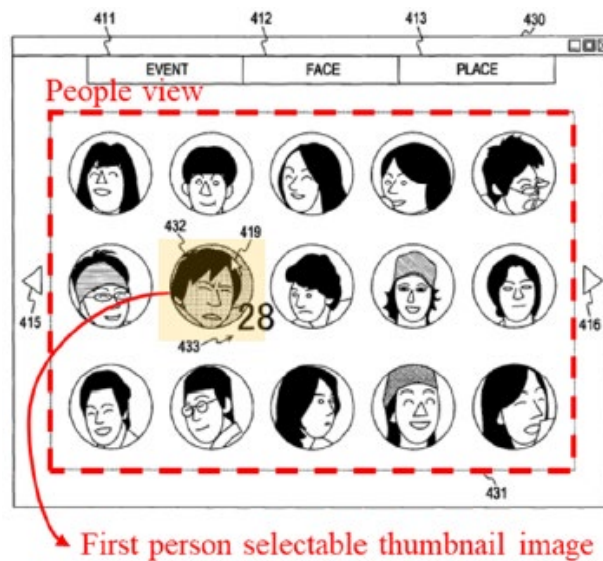
As discussed above, claim 1 requires “causing a people view to be displayed” responsive to a second input and that the “people view” includes four features: a first thumbnail, a first name, a second thumbnail, and a second name. Appx330 (35:62–36:11); *supra* § I.A. If a “view” lacks one of these four features, it cannot be the “people view.” Appx10034 (¶77). But under the Board’s reading of claim 1, the step of “causing a people view to be displayed” does not require causing *all* four features of the “people view” to be displayed. A “view” is not the claimed “people view” unless it includes two thumbnails and two names. Appx10033 (¶73); Appx4622–4626 (¶¶131, 137, 139). Because the claim requires causing the people view to be displayed responsive to the second input, it necessarily requires displaying all elements of the people view responsive to the second input.

## **II. THE BOARD ERRED IN FINDING THAT OKAMURA DISCLOSES DISPLAYING THE CLAIMED PEOPLE VIEW**

Under the correct constructions of the “people view” and “responsive to” limitations, Okamura does not disclose the claimed people view for two independent reasons. First, Okamura does not disclose displaying two names simultaneously in an alleged people view. Instead, as the Board confirmed, Okamura can only display a single name at any time. Second, Okamura does not disclose displaying the claimed people view “responsive to” the claimed input (or click/tap). Instead, Okamura’s alleged people view only displays a name responsive to multiple additional inputs. Accordingly, the Board’s unpatentability findings for claims 5-12 of the ‘658 Patent and claims 1-17 of the ‘228 Patent should be reversed.

### **A. Okamura Does Not Disclose Displaying Two Names Simultaneously in a People View**

The Board found that Okamura’s index screen 430, which includes a set of “thumbnail images,” discloses the claimed “people view.” Appx157–158; Appx78–81; Appx972 (¶[0246]).



Appx507 (annotating Appx908 (FIG. 21)); *see also* Appx7146 (same)

Okamura discloses that the name is displayed only when a user mouses-over one of the faces. Appx156 (quoting Appx509); Appx78–79. Importantly, as the Board recognized, it is *impossible* to display more than one name at a time because the *only* way to display the name is for the user to move and hover their cursor over a face in Okamura. Appx972 (¶[0247]); Appx4677–4679 (¶¶264–265); Appx10037–10038 (¶90); Appx10995–10996 (21:18–22:13). While conceding Okamura works in this manner, the Board nonetheless determined that “[n]othing in claim 5 precludes the display of a first name followed by the display of a second name.” Appx157. Likewise, for the ‘228 Patent, the Board found that the claims “do not require that the first name and second name be displayed in the same view.” Appx69. As discussed above, properly construed, the claims require the simultaneous display of the first and second names in the “people view.” *Supra* § I.A.

**B. Okamura’s Alleged “People View” is Not Displayed “Responsive To” the Input Required in the Claims**

The claims also require that the people view be displayed “responsive to” a particular input. In the ‘658 Patent, the people view is displayed responsive to a click or tap of a people selectable element. In the ‘228 Patent, the people view is displayed responsive to a second input. In both patents, the two names must be displayed responsive to the relevant input. *Supra*, § I.B.5. In Okamura, that input is a selection of the face tab 412. Appx505–507; Appx7177. However, the response to selecting the face tab 412 does not result in the claimed people view because no names are displayed. Appx4677 (¶263); Appx10037–10038 (¶¶89–91). Instead, a name is only displayed if a user hovers their cursor over one of the faces, a different input. *Supra* § II.A; Appx972 (¶[0247]); Appx4677 (¶263); Appx10037–10038 (¶¶89–91); Appx10995–10996 (21:18–22:13).

Recognizing this shortcoming in Okamura, the ‘658 Decision stated that “the intervening mouse roll-over required to display the first or second name does not preclude Okamura from meeting the limitations of claim 5 . . . because the claim does not preclude user interaction or software implementation.” Appx157. This determination by the Board is predicated on its erroneous construction of “responsive to,” and, accordingly, it must be reversed.

The Board’s ‘228 Decision must also be reversed. In the ‘228 Decision, the Board found that “claim 1 does not require that the first name be displayed



‘responsive to’ the second input” based on its erroneous construction of “responsive to.” Appx67–68. Under MemoryWeb’s construction of “responsive to,” Okamura does not disclose displaying the first name in response to the second input.

Accordingly, the Board’s findings that Okamura discloses displaying the claimed people view responsive to the input in claim 5 of the ‘658 Patent and claim 1 of the ‘228 Patent should be reversed.

### **III. THE BOARD ERRED IN FINDING THAT OKAMURA DISCLOSES THE DISPLAYING THE FIRST PERSON VIEW IN CLAIMS 7-12 OF THE ‘658 PATENT**

The Board reached opposite conclusions in the ‘228 Patent and ‘658 Patent Decisions for nearly identical claims based on nearly identical evidence. Issue preclusion requires the Court reverse the Board’s finding that claim 7 of the ‘658 patent is unpatentable.

The Court should alternatively vacate the finding that claim 7 of the ‘658 patent is unpatentable because the Board’s inconsistent findings are arbitrary and capricious. The Board’s findings are also not supported by substantial evidence because Okamura does not disclose displaying an alleged first person view “responsive to” a click or tap in a people view for the very reasons the Board found in the ‘228 Decision. Appx94. Instead, in Okamura, there are multiple intervening inputs and views between the people view and first person view.

**A. The Board’s Findings in the ‘658 Decision are Irreconcilable with the Findings in the ‘228 Decision that Samsung did not Cross-Appeal**

The limitations of claim 7 of the ‘658 Patent and claim 18 of the ‘228 Patent are nearly identical. Appx257 (36:56–62); Appx331 (38:8–13).

‘658 Patent, Claim 7	‘228 Patent, Claim 18
. . . responsive to a click or tap of the first person selectable thumbnail image, displaying a first person view, the displaying the first person view including displaying (i) the name associated with the first person and (ii) a scaled replica of each of the digital photographs and videos in the third set of digital photographs.	. . . responsive to an input that is indicative of a selection of the first person selectable thumbnail image, causing a first person view to be displayed on the interface, the first person view including (i) the first name and (ii) a representation of each digital file in the third set of digital files.

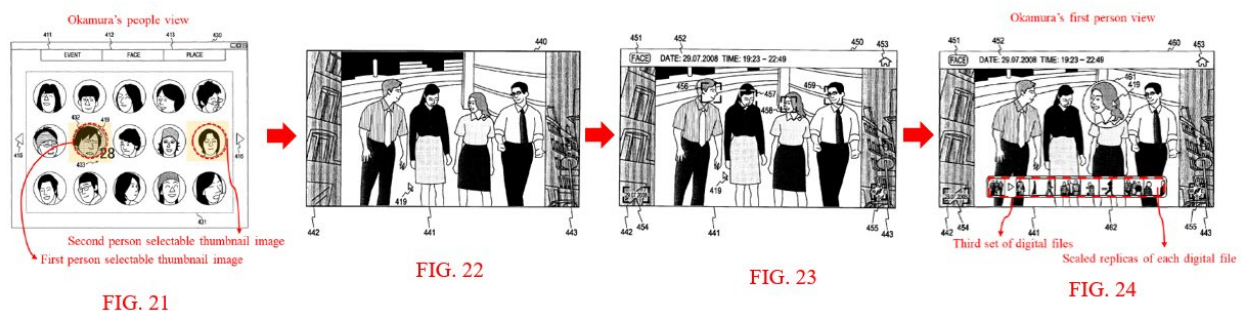
Any differences between these claims are insubstantial.

As shown below, Samsung’s petitions advanced virtually identical arguments for these claim limitations:

Samsung's '658 Argument	Samsung's '228 Argument
<p>Okamura describes that selecting, by a click or tap, a face-based thumbnail image (“when a desired cluster is determined by a user operation” ... “for example, a click operation with the mouse”) causes the user interface to display “contents included in the face cluster.” Appx515.</p>	<p>Okamura describes that selecting, by a click or tap, a face-based thumbnail image (“when a desired cluster is determined by a user operation” ... “for example, a click operation with the mouse”) causes the user interface to display “contents included in the face cluster.” Appx7168.</p>
<p>Content playback screen 460 (first person view) includes content listing display area 462, which is “an area where a listing of contents included in the face cluster to which the content displayed in the content display area 441 belongs is displayed.” ... Content display area 441 includes a scaled replica of each digital file in the third set of digital files. Appx516.</p>	<p>The content playback screen 460 (analogous to the first person view from the '228 patent) includes a content listing display area 462, which is “an area where a listing of contents included in the face cluster to which the content displayed in the content display area 441 belongs is displayed.” . . . That is, the content display area 441 includes a representation of each digital file in the third set of digital files. Appx7179.</p>

Samsung's petitions included nearly identical annotations mapping the claim language to Okamura and its expert also offered nearly identical opinions in both proceedings. Appx516; Appx7179; Appx856–857 (¶¶168–169); Appx7728–7729 (¶¶187–188).

MemoryWeb demonstrated in both proceedings that, in Okamura, an input in the alleged people view does *not* cause the alleged first person view to be displayed; instead, there are multiple intervening actions and views, including the views (FIGS. 22 and 23) shown below:



#### Appx909–912 (FIGS. 21–24)

In the '228 Decision, the Board agreed with MemoryWeb and found that Okamura did not adequately show how selecting a thumbnail in the people view would result in the display of the first person view. Appx94. The Board agreed that in Okamura, the first person view is *not* displayed when the user mouse-overs a face in the people view, rather it is only displayed after several additional steps. *Id.* The Board concluded that Samsung's petition did "not adequately explain how the

combined teachings of Okamura and Belitz render claim 18 obvious.” *Id.* Samsung did not cross-appeal this ruling.

Despite the substantial identity of claim 7 of the ‘658 Patent and claim 18 of the ‘228 Patent and Samsung’s reliance on the same arguments in both proceedings, the Board reached opposite conclusions. Appx159; Appx183–184. This is error for two reasons. First, issue preclusion flowing from the final non-appealed ‘228 Decision requires reversal of the Board’s contrary findings in the ‘658 Decision. Second, the ‘658 Decision is arbitrary and capricious because the Board reached the opposite conclusions without any explanation for these differences, which at least requires vacatur.

**1. Issue Preclusion Resulting from the Final ‘228 Decision Requires Reversing the ‘658 Decision’s Claims 7-12 Findings**

Samsung did not cross-appeal the Board’s determinations that claims 18 and 19 of the ‘228 Patent are not unpatentable and are, therefore, final. The Court should reverse the Board’s Decision and hold that Samsung did not meet its burden to show claim 7 is not unpatentable because issue preclusion bars Samsung from relitigating the validity of claim 7 of the ‘658 Patent and its dependent claims. *Google*, 54 F.4th at 1381-1382.

Issue preclusion applies when “(1) the issue is identical to one decided in the first action; (2) the issue was actually litigated in the first action; (3) resolution of

the issue was essential to a final judgment in the first action; and (4) the party against whom collateral estoppel is being asserted had a full and fair opportunity to litigate the issue in the first action.” *Id.* at 1381 (internal brackets and quotations omitted). Each of these requirements is met in this case.

First, the issue in the ‘658 patent proceeding is identical to that in the ‘228 patent proceeding. While the claims contain minor differences, they “need not be identical for collateral estoppel to apply.” *Google*, 54 F.4th at 1381. Indeed, collateral estoppel applies where, as here, the claims “are substantially similar to” one another and “use slightly different language to describe substantially the same invention.” *Ohio Willow Wood Co. v. Alps S., LLC*, 735 F.3d 1333, 1342 (Fed. Cir. 2013); Appx6936–6937 (15:8–16:15) (agreeing that “the claim language is very similar”). Any differences between the claims in the ‘228 and ‘658 Patents do not materially alter the question of patentability, which turns on Okamura’s disclosure and the sufficiency of Samsung’s petition. *Google*, 54 F.4th at 1382. Further confirming the identity of issues, Samsung’s petitions presented nearly identical arguments regarding Okamura’s transition from the alleged people view to the alleged person view. *Supra* § III.A.

Second, these issues were extensively litigated. *Google*, 54 F.4th at 1381. MemoryWeb argued in both proceedings that Okamura failed to disclose the people view to person view transition. Appx4216–4222; Appx9731–9733. Samsung fully

replied to those arguments. Appx5742–5743; Appx10191–10192. After full proceedings on the issue, the Board sided with MemoryWeb in the ‘228 Decision and found that Samsung failed to establish that Okamura disclosed the required features of claim 18. Appx94.

Third, resolution of this issue was essential to the final judgment in the ‘228 Decision. *Google*, 54 F.4th at 1381. The Board’s findings regarding Samsung’s petition and Okamura’s disclosure were the sole basis for its findings that claims 18–19 of the ‘228 Patent were not unpatentable. Appx94.

Fourth, Samsung had a full and fair opportunity to litigate this issue. *Google*, 54 F.4th at 1381. Samsung submitted a reply addressing whether Okamura transitions directly from the alleged people view to the alleged person view and participated in oral argument. Appx10191–10192; Appx11002–11003 (28:9–29:12). Despite losing this issue in the ‘228 Decision, Samsung chose not to appeal.

While the ‘228 Decision issued after the ‘658 Decision because the one-year statutory deadline was extended in the ‘228 proceeding, “issue preclusion applies even though the precluding judgment . . . comes into existence while the case as to which preclusion is sought (this case) is on appeal.” *MaxLinear, Inc. v. CF CRESPE LLC*, 880 F.3d 1373, 1376 (Fed. Cir. 2018). In this case, the ‘228 Decision became final when Samsung chose not to file a cross-appeal of that Decision. *See Bailey v. Dart Container Corp. of Mich.*, 292 F.3d 1360, 1362 (Fed. Cir. 2002) (“a party must

file a cross-appeal when acceptance of the argument it wishes to advance would result in a reversal or modification of the judgment rather than an affirmance”).

All four requirements for collateral estoppel are met. The ‘228 Decision’s finding that the petition did “not adequately address” the claimed transition from the people view to person view is determinative. Appx94. The Board’s finding to the contrary in the ‘658 Decision should be reversed.

## **2. The ‘658 Decision Should Alternatively be Vacated and Remanded in View of the Board’s Inconsistent Findings**

Even if issue preclusion does not apply, at a minimum, the Board’s findings for claim 7 of the ‘658 Patent should be vacated. This Court has held that where, as here, the Board “issues opinions on the same technical issue between the same parties on the same record, and reaches opposite results without explanation” it is appropriate “to vacate and remand these findings for further consideration.” *Vicor Corp. v. SynQor, Inc.*, 869 F.3d 1309, 1312, 1322 (Fed. Cir. 2017). Indeed, this Court often vacates decisions where the Board’s findings are inconsistent with a different decision. *See, e.g., Emerson Elec. Co. v. SIPCO, LLC*, 745 F. App’x 369, 373 (Fed. Cir. 2018) (vacating decision in view of the Board’s findings in another related IPR because “[t]he Board came to opposite conclusions on patentability of . . . nearly identical claims despite considering nearly identical evidence in both cases”) (non-precedential); *BASF Corp. v. Enthone, Inc.*, 749 F. App’x 978, 985 (Fed. Cir. 2018) (vacating decision where “[t]he PTAB acted arbitrarily and capriciously by failing



to provide a reasoned explanation for reaching an inconsistent finding” in different proceedings) (non-precedential).

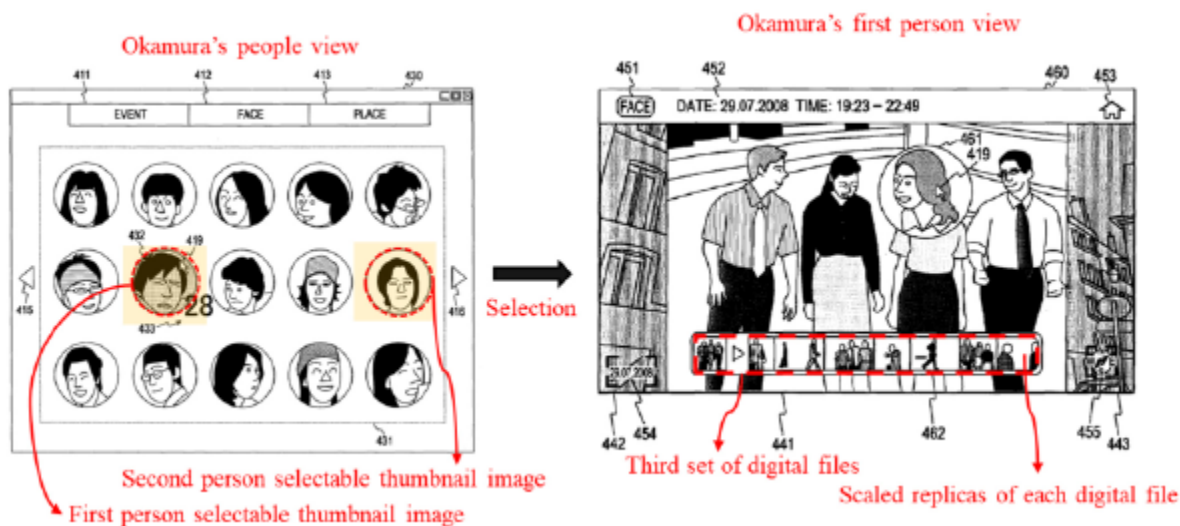
It cannot be that the same evidence and arguments regarding Okamura are insufficient for Samsung to meet its burden for claim 18 of the ‘228 Patent, yet sufficient for Samsung to carry its burden for claim 7 of the ‘658 Patent. The Board did not acknowledge or provide any basis for these irreconcilable results. The Board’s findings in the ‘658 Decision are therefore arbitrary and capricious and should, at a minimum, be vacated and remanded.

**B. Okamura Does Not Disclose Displaying a “[First/Second] Person View” Under the Proper Construction of “Responsive To”**

The Board found that Okamura discloses displaying a “[first/second] person view” based on its erroneous construction of “responsive to.” Specifically, the Board found that MemoryWeb’s “argument rests on its overly narrow construction of the claim term ‘responsive to’ which we rejected” and that “Okamura discloses display of the claimed scaled replicas ‘responsive to’ a click or tap of a first or second person selectable thumbnail as required by claims 7 and 10.” Appx159; *see also* Appx183.

Properly construed, “responsive to” requires a cause-effect relationship between “a click or tap of the first person selectable thumbnail image” in the people view and “displaying a first person view.” *Supra* § I.B. Under this construction, there is no dispute that Okamura fails to disclose the claimed direct transition from the people view to person view.

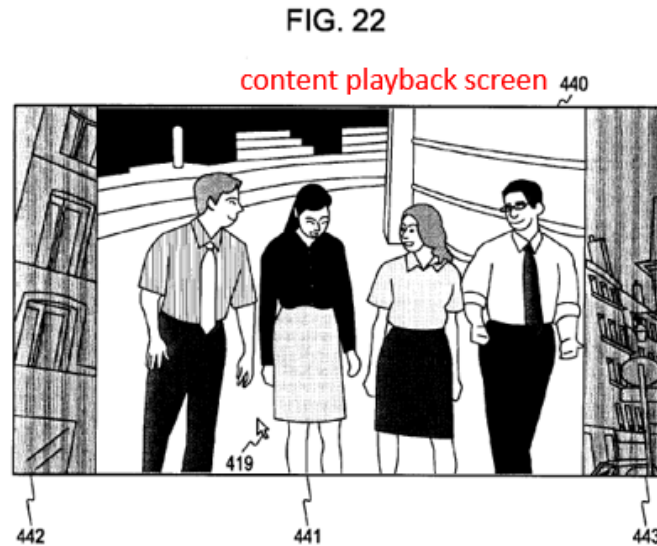
In its Petition, Samsung argued “that ‘Okamura describes that selecting, by a click or tap, a face-based thumbnail image . . . causes the user interface to display contents included in the face cluster.’” Appx158 (internal quotation marks omitted). Specifically, Samsung argued that selecting a thumbnail in the alleged people view (FIG. 21) causes the alleged person view (FIG. 24) to be displayed. Appx516.



Appx516 (annotating Appx908 (FIG. 21) and Appx911 (FIG. 24))

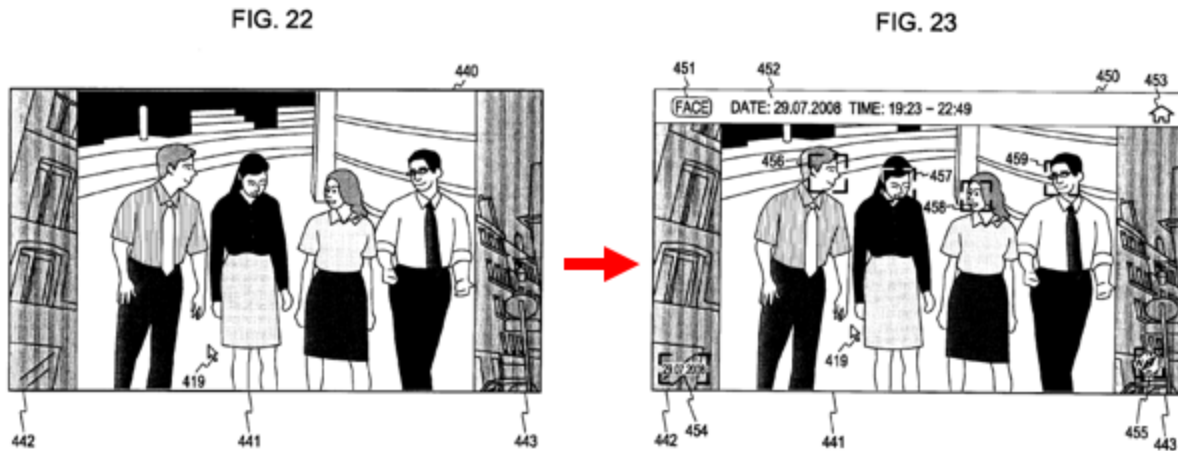
As discussed above (*supra* § III.A), in the ‘228 Decision, the Board correctly found that “Figure 24 is displayed when the mouse is hovered over a face portion in Figure 23, not Figure 21.” Appx94. In other words, Okamura’s content playback screen 460 (FIG. 24) is *not* displayed responsive to a click or tap in the index screen 430 (FIG. 21). Appx4683–4687 (¶¶272–278). Instead, there are multiple intervening inputs and views between the alleged people view (FIG. 21) and the alleged person view (FIG. 24).

First, selecting a thumbnail in the alleged people view causes a first intermediate view (FIG. 22) to be displayed. Appx972 ([0250]); Appx4683–4684 ([273–274]).



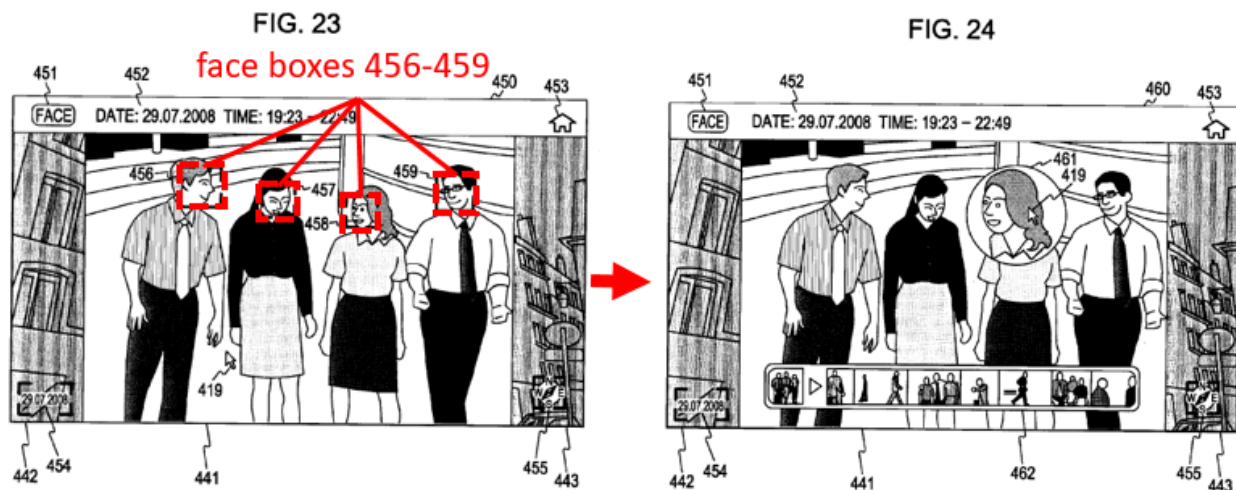
Appx909 (FIG. 22) (annotated)

Second, “a user operation” within the first intermediate view (FIG. 22) causes a second intermediate view (FIG. 23) to be displayed. Appx973 ([0252]); Appx4684–4685 ([275]); Appx4763 (119:11–20), Appx4765 (127:11–15).



Appx909-910 (FIGS. 22-23)

Third, within the slideshow content playback screen 450 in FIG. 23, the user must select a face box to cause the content playback screen 460 in FIG. 24 (the alleged person view) to be displayed. Appx973 ([0259]-[0261]); Appx4685-4686 ([0276-277]); Appx4763 (119:7-10, 119:21-120:7); Appx4765 (127:16-19, 128:19-129:6); Appx9966 (130:10-131:12).



Appx910-911 (FIGS. 23-24) (annotated)

The flow diagrams in FIGS. 31-33 confirm this progression through FIGS. 21-24. *See* Appx918–920 (FIGS. 31–33), Appx977–978 (¶¶[0301], [0304] [0309]); Appx4689–4693 (¶¶283–289).

Okamura, therefore, requires the following additional inputs and views between FIG. 21 (the alleged people view) and FIG. 24 (the alleged person view):

(1) selecting a cluster in FIG. 21 to display FIG. 22’s content playback screen 440, which operates as a slideshow;

(2) performing a “user operation” on a desired image within the FIG. 22 slide show to display FIG. 23’s content playback screen 450;

(3) identifying a face box 456–459 in content playback screen 450; and

(4) selecting the identified face box to display FIG. 24’s content playback screen 460. Appx94; Appx972–973 (¶¶[0250]–[0261]); Appx6738–6739 (152:11–153:7); Appx4682–4689 (¶¶269–282).

There was no dispute that these additional inputs and views do not meet MemoryWeb’s “responsive to” construction. Accordingly, the Court should reverse the Board’s findings that Okamura discloses the claim 7 limitations because the Board applied an incorrect construction of “responsive to” in the Decision and Okamura does not disclose them under MemoryWeb’s construction.

**C. Okamura Does Not Disclose Displaying the “First Person View” Even Under the Board’s Incorrect Construction**

Alternatively, the Court should vacate the ‘658 Decision because the Board ignored MemoryWeb’s argument that Okamura does not disclose the limitations of claim 7 using Samsung’s construction of “responsive to.” *See Alacritech, Inc. v. Intel Corp.*, 966 F.3d 1367, 1371 (Fed. Cir. 2020) (vacating where Board failed to acknowledge party’s argument). The entirety of the Board’s substantive analysis regarding claim 7 consisted of rejecting MemoryWeb’s arguments as “rest[ing] on its overly narrow construction of the claim term ‘responsive to’” and stating that “Okamura discloses display of the claimed scaled replicas ‘responsive to’ a click or tap of a first or second person selectable thumbnail as required by claims 7 and 10.” Appx159. The Board gave no other reasoning for its conclusion. *Id.*

Contrary to the Board’s treatment, MemoryWeb’s arguments were not solely dependent on its construction of “responsive to.” MemoryWeb argued that the multiple additional and intervening inputs and views between Okamura’s alleged people view and alleged person view (*supra* § III.B) did not satisfy the “responsive to” requirement even under the claim construction the Board ultimately adopted:

But even if, *arguendo*, the Board construes “responsive to” as not requiring a *direct* cause-effect relationship, the scenario described above in Okamura including *multiple* intervening views, decisions, and inputs does not meet any reasonable construction of “responsive to.” . . . To find otherwise would render much of the claim language

requiring a specific click/tap of a specific item in a specific view meaningless.

Appx6471; Appx4683–4687 (¶¶272–278).

The Board ignored this argument and failed to explain how Okamura satisfies its construction of “responsive to.” Appx55; Appx6471. The Board also failed to address this argument in its Rehearing Decision. Appx183. This is especially egregious because the Board rejected a construction of “responsive to” requiring a single input but acknowledged that its construction does not allow for infinite intervening inputs. Appx122. Thus, even assuming the Board’s construction is correct, there is a point where the number or type of intervening inputs—between, for instance, the transition from people view to person view—will cause the relationship to no longer be “responsive to.” The Board never explained how Okamura meets its construction of “responsive to” without crossing that line; instead, it merely assumed that rejecting MemoryWeb’s construction was dispositive when it was not. Appx55; Appx6471.

This Court vacates and remands decisions where, as here, the Board “does not acknowledge [an] aspect of the parties’ dispute.” *Alacritech*, 966 F.3d at 1371. Even if the Board were somehow credited for acknowledging MemoryWeb’s argument that Okamura does not meet the Board’s construction in passing (which it did not), “it is not adequate to summarize and reject arguments without explaining why the PTAB accepts the prevailing argument.” *In re Nuvasive, Inc.*, 842 F.3d 1376, 1383

(Fed. Cir. 2016). The ‘658 Decision does not provide a “reasoned basis” for finding that Okamura meets the “responsive to” requirement under the Board’s construction. *Securus Techs., Inc. v. Glob. Tel\*Link Corp.*, 685 F. App’x 979, 987 (Fed. Cir. 2017) (non-precedential).

For this additional reason, the ‘658 Decision’s findings for claim 7 (and its dependent claims) should be vacated and remanded.

#### **IV. THE BOARD ERRED IN FINDING THAT IT WOULD HAVE BEEN OBVIOUS TO COMBINE OKAMURA AND BELITZ**

##### **A. The Board Ignored MemoryWeb’s Arguments Regarding Okamura’s Teaching Away**

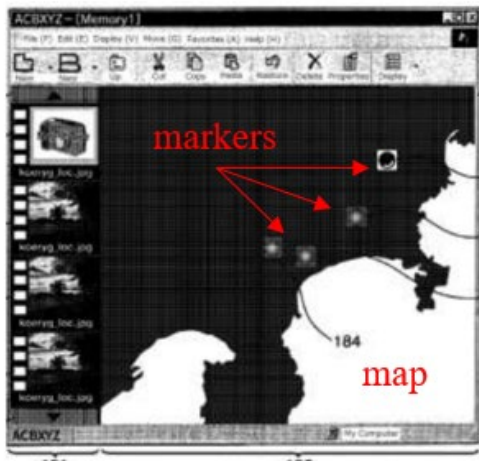
The Board’s findings that it would have been obvious to combine Okamura and Belitz should be reversed, or at least vacated, because the Board failed to address critical arguments and evidence demonstrating non-obviousness. *Chemours Co. FC, LLC v. Daikin Indus., Ltd.*, 4 F.4th 1370, 1377, 1379 (Fed. Cir. 2021) (reversing Board’s obviousness determination, holding the Board relied on an inadequate evidentiary basis and failed to articulate a satisfactory explanation based on substantial evidence for motivation to combine where primary reference taught away from the combination); *Google LLC v. Conversant Wireless Licensing S.A.R.L.*, 753 F.App’x 890, 895 (Fed. Cir. 2018) (vacating and remanding where Board Decision was incomplete and failed to address key arguments and issues) (non-precedential) (citing *Vicor*, 869 F.3d at 1321).



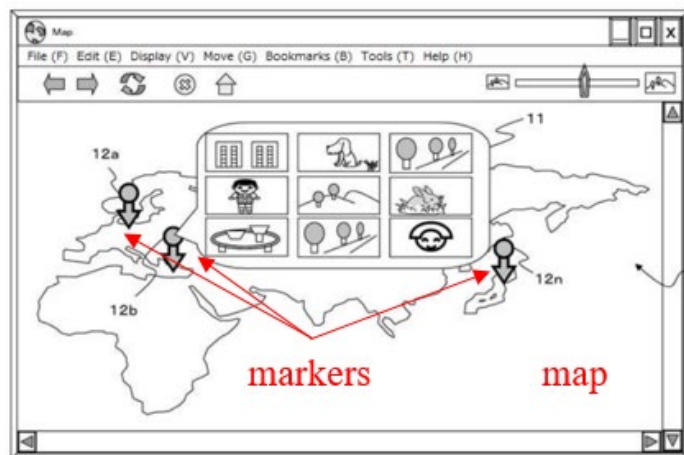
MemoryWeb demonstrated that Okamura discredits “related art” that used a single map with markers to show the locations where photos were taken. According to Okamura, the problem with the related art is that using a single map, even with an adjustable scale, limits the amount of information that can be conveyed at any given time. MemoryWeb demonstrated that if Okamura were combined with Belitz, this would reintroduce the exact same problems the related art Okamura discredits. Appx4185–4191; Appx6478–6480; Appx9705–9712; Appx10686–10688. While the Board acknowledged that Okamura discredits the related art, it mischaracterized the way in which Okamura teaches away and failed to address MemoryWeb’s argument that combining Okamura with Belitz would lead to the same problems that Okamura sought to solve. The Board’s failure to understand the issue and address MemoryWeb’s argument warrants vacatur.

# **1. Okamura Disparages “Related Art” that Suffered from Scaling Problems**

Okamura disparages two references it refers to as “related art.” Appx90 (finding that the related art is “discredited by Okamura”); Appx954 (¶¶[0009]–[0010]). As shown below, the related art used markers overlaid on a map to show locations where photographs were taken. Appx4586–4588 (¶¶59–61).



Appx3560 (FIG. 12) (annotated)



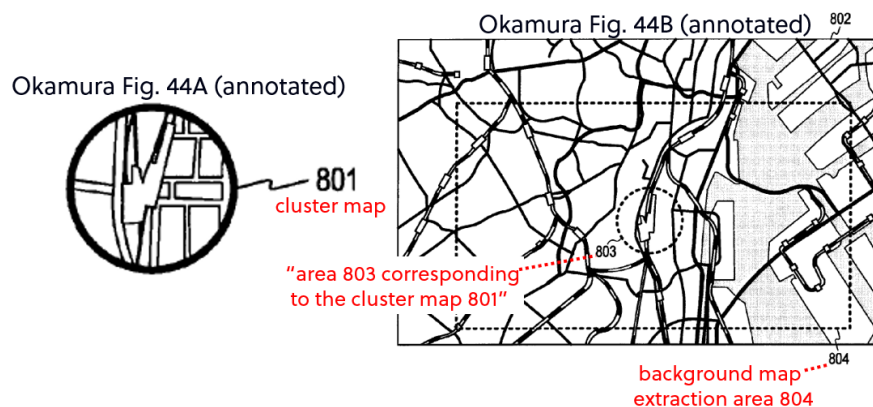
Appx4389 (FIG. 1) (annotated)

In the related art, regardless of the zoom-level, the entire displayed map has a single uniform scale. Okamura, however, teaches that displaying a map with a uniform scale will limit how much information can be conveyed at any given time. Appx954 (¶¶[0009]–[0010]); Appx4650–4651 (¶¶194–197); Appx10050 (¶¶133–135); Appx4747–4748 (55:15–19, 56:7–19, 57:7–58:11).

Okamura illustrates the scaling problem using two examples. First, when the map is zoomed out to show multiple countries or continents, all of the images in a large area—such as Tokyo and its vicinity—are displayed at substantially the same point on the map making it difficult to discern between images taken in downtown Tokyo versus others taken in surrounding areas. Appx954 (¶[0009]); Appx10050 (¶134); Appx4651 (¶196); Appx4511–4512 (98:10–99:21, 103:18–104:14); Appx4749 (62:5–17). Second, and conversely, when the map is zoomed in to show the locations of images taken in Tokyo, it is not possible to display locations of

images taken in other regions (for example, the United States). Appx954 (¶[0010]); Appx10050 (¶135); Appx4651 (¶197).

Okamura addressed these scaling problems by using so-called “cluster maps” each having different, varying scales to ensure the contents “belonging to each cluster can be . . . easily grasped by the user.” Appx970 (¶¶[0215]–[0219]), Appx986 (¶[0410]); Appx4651–4652 (¶¶198–201). For example, the cluster map 801 in FIG. 44A uses a different scale than the background map 804 to show more detail. Appx985–986 (¶¶[0407]–[0411]); Appx4652 (¶¶199–200).



Appx931 (FIGS. 44A–44B) (annotated)

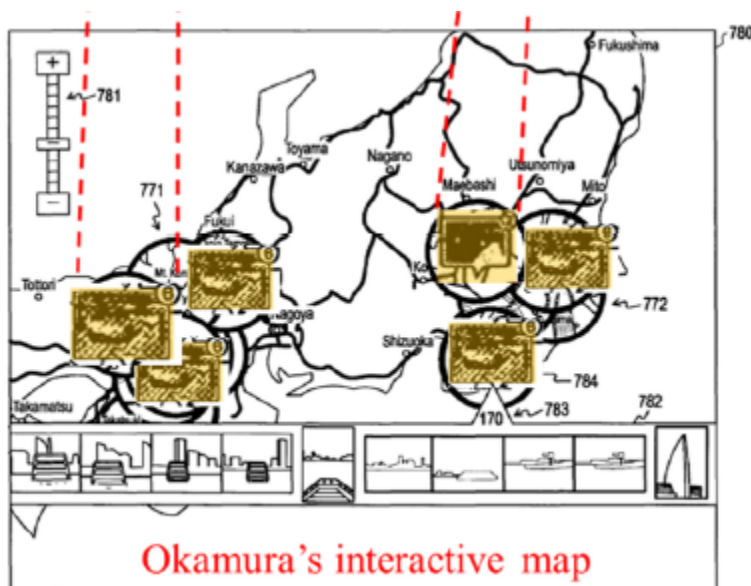
Samsung’s expert agreed that Okamura’s cluster maps address the “scaling situation” in the related art. Appx4748–4749 (60:7–61:20, 62:5–17); *see also* Appx4511–4512 (98:10–99:21, 103:18–104:14, 105:6–13).

Okamura’s disparagement of the related art and its scaling problems is a clear example of teaching away.

## 2. Samsung's Proposed Combinations of Okamura and Belitz Have the Same Scaling Problems as the Related Art

The Board improperly found obvious the combination of Belitz's thumbnails and single uniformly scaled map—the same type disparaged and taught away by Okamura—with Okamura's display. Appx4185–4191; Appx6478–6480; Appx9705–9712; Appx10686–10688. The Okamura-Belitz combination results in the same scaling problems as the related art Okamura disparages. *Id.*

The first Okamura-Belitz combination—which the Board found obvious in both Decisions—replaces Okamura's cluster map group 771 in FIG. 41 with Belitz's graphical objects 410a-d.

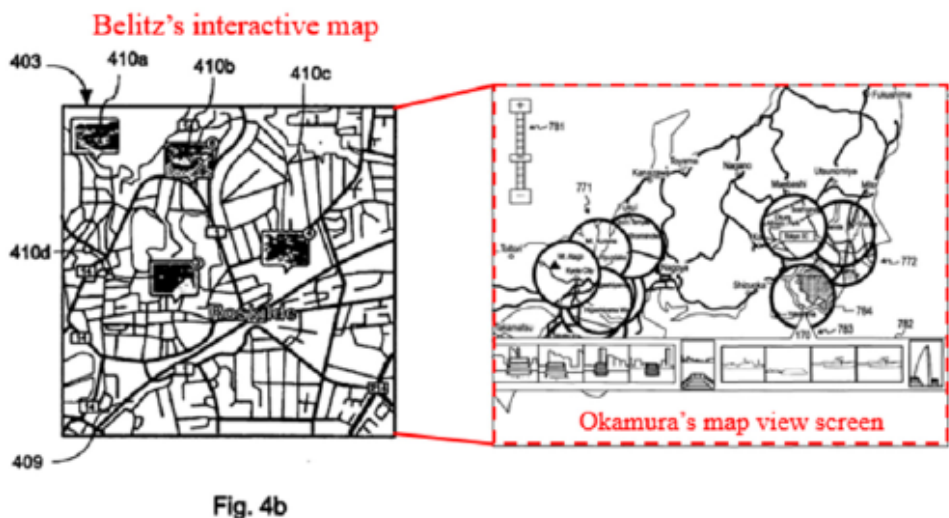


Appx458; Appx7114

This modification eliminates Okamura's cluster maps, leaving a single uniform scale map just like the related art. Appx4650 (¶¶192–193); Appx10048–10049 (¶¶130–

131); Appx4748–4749 (60:7–61:20; 62:5–17). Even Samsung’s expert admitted that putting “thumbnails in the map . . . aren’t going to work as well” as Okamura’s cluster maps (Appx9958 (98:10–99:21)), and that with thumbnails “you’d have the same problem or even a worse one” compared to the related art (Appx10735 (144:4–15)). *See also* Appx6719–6721 (75:19–76:1, 79:6–82:13, 83:24–84:17). Thus, the first Okamura-Belitz combination has the same scaling problem as the related art.

The second Okamura-Belitz combination—which the Board found obvious in the ‘658 Decision only—replaces Okamura’s map view in FIG. 41 with Belitz’s map view.



Appx463

This modification also entirely eliminates Okamura’s cluster maps in favor of thumbnails on a single map with a uniform scale, resulting in the same scaling problems as the related art. Appx4665 (¶¶234–235).

A skilled artisan would be discouraged from modifying Okamura to eliminate its cluster maps and reintroduce the same scaling problems as the related art. *Supra* § IV.A.1. The Board did not find otherwise. This should have compelled a finding of non-obviousness. *Chemours*, 4 F.4th at 1376–1377

### **3. The Board Mischaracterized the Issues and Failed to Address MemoryWeb’s Arguments**

While the Board’s Decisions reproduced portions of MemoryWeb’s arguments regarding the related art, the Board’s substantive obviousness analysis either ignored or mischaracterized them. The Board’s failure to address these arguments at least requires vacatur. *Google*, 753 F.App’x at 895; *Vicor*, 869 F.3d at 1321.

In the ‘228 Decision, the Board stated that it “agree[d] with [Samsung] that Belitz does not suffer from the same geographical deficiencies as the references discredited by Okamura in that the proposed combination can be achieved without overlap.” Appx90. Notably, the Board agreed that Okamura “discredited” the related art. *Id.* However, the Board erred by focusing on “overlap” and failing to address MemoryWeb’s argument that Okamura’s problem with the related art was the scaling problem. *Supra* § IV.A.1. The Board never addressed this critical issue that Okamura teaches away from combining Okamura and Belitz because the resulting combination has the exact same scaling problems as the related art. *Id.*; Appx9705–9712; Appx10686–10688.

In the ‘658 Decision, the Board stated that it did “not agree with [MemoryWeb] that Belitz’s thumbnails are subject to the same disadvantages as [the related art], that present a background map with generic markers, because Belitz’s thumbnails are not generic.” Appx141 (citing Appx4185). Again, the Board improperly focused on the wrong issue. Okamura does not disparage the related art because it uses generic markers; instead, as MemoryWeb explained, Okamura disparages the related art because it uses a single map with a uniform scale. *Supra* § IV.A.1; Appx4185–4191; Appx6478–6480. Similar to the ‘228 Decision, the Board never addressed that modifying Okamura with Belitz results in the exact same scaling problems as the related art discredited by Okamura. *Id.*

This failure warrants reversal or vacatur and remand for proper consideration of the issues.

**B. The Board Committed Additional Legal Errors in its Obviousness Analysis in the ‘228 Decision**

The ‘228 Decision’s obviousness findings are legally and factually flawed and therefore should be reversed or vacated for two additional reasons. First, the Board’s finding that combining Okamura and Belitz offers certain unidentified “advantages” is conclusory and unsupported. Second, and relatedly, the Board erred by failing to weigh the disadvantages against the purported advantages of combining Okamura and Belitz, as it was required to do.

# **1. The Board Failed to Find Any Purported Advantages Offered by the Combination**

The Board found that combining Okamura and Belitz would have been obvious because there are certain “advantages” to doing so. Appx90. Yet the Board made no express findings as to what these supposed “advantages” were. *Id.* This lack of explanation warrants vacatur because it does not “meet the governing legal standards[ ] to enable judicial review and to avoid judicial displacement of agency authority.” *Pers. Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017). The Board’s citation to Samsung’s Reply brief does not suffice; if the Board intends to adopt a party’s argument, it must expressly do so and explain why it credited that argument. *Nuvasive*, 842 F.3d at 1384–85. Vacatur is required because the Board failed to explain its rationale or expressly adopt Samsung’s arguments.

Even if, *arguendo*, the Board expressly adopted Samsung’s arguments, the only purported “advantage” Samsung identified was that “the proposed combination ‘enhances a user’s experience of discerning between the various objects’ by providing a good view of what location is associated with what.” Appx10183–10184. However, Okamura *already* provides “a good view of what location is associated with what,” and, according to Okamura, it worsens its ability to convey that information. App10055 (¶¶152–153). Because this “advantage” is already present in Okamura, there is no reason to combine Okamura with Belitz to achieve it. *See Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1369 (Fed.



Cir. 2012) (finding “no reason to combine” where both references “independently accomplish similar functions”). The Board ignored this argument, and its findings are not supported by substantial evidence.

## **2. The Board Misapplied the Law by Failing to Weigh Advantages and Disadvantages of the Combination**

Even if the Board had articulated “advantages” of the Okamura-Belitz combination, the Board failed to weigh those “advantages” against Okamura’s preferences and the resulting disadvantages. Appx90. Even where a reference is not found to “teach away, its statements regarding preferences are relevant to a finding regarding whether a skilled artisan would be motivated to combine that reference with another reference.” *Polaris*, 882 F.3d at 1069. Even where there is “[e]vidence suggesting reasons to combine,” such evidence “cannot be viewed in a vacuum apart from evidence suggesting reasons not to combine.” *Arctic Cat Inc. v. Bombardier Recreational Products Inc.*, 876 F.3d 1350, 1360 (Fed. Cir. 2017). If combining references would result in disadvantages, the Board should weigh them against one another. *Winner Int’l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000).

The Board never addressed how the unstated advantages outweigh Okamura’s strong preference for cluster maps over systems like the related art and Belitz that use a single map. Appx90. Instead, the Board merely observed that a skilled artisan “would have been capable of weighing [the advantages] against any benefits lost.”

*Id.* (citing *Winner*, 202 F.3d at 1349 n.8). The Board failed to do weigh the unstated advantages with the disadvantages in the Decision. The Board also failed to consider Okamura’s preferences for cluster maps. *Supra* §§ IV.A.1–V.A.2. Okamura’s preferences, however, are “relevant to a finding regarding whether a skilled artisan would be motivated to combine.” *Polaris*, 882 F.3d at 1069.

### **C. The Board Committed Additional Legal Errors in the ‘658 Decision**

The Board also misapplied the law by failing to properly weigh the advantages and disadvantages of the combination in the ‘658 Decision. Appx141. As with the ‘228 Decision, because the Board failed to understand Okamura’s disparagement of the related art and its preferences, the Board did not properly weigh the advantages and disadvantages of the combination. *Supra* §§ V.A.3 and V.B.2; *Winner*, 202 F.3d at 1349.

The Board also misapplied the law by dismissing Okamura’s preference for using cluster maps. In response to MemoryWeb’s argument that combining Okamura with Belitz would eliminate the cluster maps, the Board remarked that “we do not see how this observation renders the proposed combination untenable.” Appx144–145. First, MemoryWeb was also not required to show that the combination would be untenable. Second, eliminating Okamura’s cluster maps is a fundamental change to Okamura’s system. Appx4662 (¶229). Contrary to the Board’s suggestion, this is highly relevant to the obviousness inquiry. *See Plas-Pak*

*Indus., Inc. v. Sulzer Mixpac AG*, 600 F.App'x 755, 757-58 (Fed. Cir. 2015) (affirming substantial evidence supported Board's finding of no motivation to combine where combination would fundamentally alter operation of reference). Third, Okamura's preferences are relevant to whether there is a motivation to combine. *Polaris*, 882 F.3d at 1069.

### **CONCLUSION AND RELIEF SOUGHT**

The Board's decisions that claims 1-13 of the '658 Patent and claims 1-17 of the '228 Patent are unpatentable should be reversed or, at least, vacated and remanded for further proceedings.

Respectfully submitted,

/s/ Jennifer Hayes

JENNIFER HAYES

NIXON PEABODY LLP

300 South Grand Avenue

Suite 4100

Los Angeles, CA 90071-3151

Tel: 213-629-6000

Fax: 213-629-6001

DANIEL SCHWARTZ

MATTHEW WERBER

ANGELO CHRISTOPHER

NIXON PEABODY LLP

70 West Madison Street

Suite 5200

Chicago, IL 60602-4378

Tel: 312-977-4400

Fax: 312-977-4405

**CERTIFICATE OF COMPLIANCE**

Pursuant to Federal Rule of Appellate Procedure 32(g)(1) and Federal Circuit Rule 32(b)(3), I certify that the brief contained herein has a proportionally spaced 14-point font typeface and contains 13,987 words, based on the “Word Count” feature of Microsoft Word, excluding the cover page, patent claims, Certificate of Interest, Tables of Contents and Authorities, Statement of Related Cases, signature block, Addendum, Certificate of Compliance, and Certificate of Service.

Date: May 17, 2024

/s/ Jennifer Hayes

JENNIFER HAYES  
**NIXON PEABODY LLP**  
300 South Grand Avenue  
Suite 4100  
Los Angeles, CA 90071-3151  
Telephone: (213) 629-6000  
Facsimile: (213) 629-6001

*Counsel for Appellant*  
*MemoryWeb, LLC*

**CERTIFICATE OF SERVICE**

I, Jennifer Hayes, hereby certify that, on this 17<sup>th</sup> day of May 2024, I caused a copy of the foregoing **Appellant MemoryWeb, LLC's Opening Brief and Non-Confidential Addendum** to be served on counsel of record via the Court's CM/ECF system.

Date: May 17, 2024

/s/ Jennifer Hayes

JENNIFER HAYES

**NIXON PEABODY LLP**

300 South Grand Avenue

Suite 4100

Los Angeles, CA 90071-3151

Telephone: (213) 629-6000

Facsimile: (213) 629-6001

*Counsel for Appellant  
MemoryWeb, LLC*

**ADDENDUM TABLE OF CONTENTS**

<b>Date</b>	<b>Document</b>	<b>Appendix Page(s)</b>
2023-12-08	Ex. 2121 - '228 Patent Final Written Decision, Case No. IPR2022-00222 [Non-Confidential]	Appx9- Appx104
2023-07-31	Paper 40 – '658 Patent - Final Written Decision, Case No. IPR2022-00221	Appx105- Appx175
2023-11-29	Paper 42 – Decision Denying Patent Owner's Request for Rehearing, Case No. IPR2022-00221	Appx176- Appx187
2021-12-17	Ex. 1001 – U.S. Patent No. 10,423,658 ("658 patent"), Case No. IPR2022-00221	Appx188- Appx258
2021-12-17	Ex. 1001 - U.S. Patent No. 10,621,228 ("228 patent"), Case No. IPR2022-00222	Appx259- Appx331

# ADDENDUM

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

SAMSUNG ELECTRONICS CO., LTD.,  
Petitioner,

v.

MEMORYWEB, LLC,  
Patent Owner.

---

IPR2022-00222  
Patent 10,621,228 B2

---

Before LYNNE H. BROWNE, NORMAN H. BEAMER, and  
KEVIN C. TROCK, *Administrative Patent Judges*.

BROWNE, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision

Determining Some Challenged Claims Unpatentable

Denying Motion to Terminate

Granting Motion for Protective Order

Granting Motions to Seal

35 U.S.C. § 318(a); 37 C.F.R. § 42.14



## I. INTRODUCTION

We have authority to hear this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, we determine that Petitioner, Samsung Electronics Co., Ltd., has shown by a preponderance of the evidence that claims 1–17 of U.S. Patent No. 10,621,228 B2 (Ex. 1001, “the ’228 patent”) are unpatentable, but has not shown by a preponderance of the evidence that claims 18 and 19 are unpatentable. *See* 35 U.S.C. § 316(e) (2018); 37 C.F.R. § 42.1(d) (2019).

### A. *Procedural History*

Petitioner, Samsung Electronics Co., Ltd., filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–19 of U.S. Patent No. 10,621,228 B2 (Ex. 1001, “the ’228 patent”).<sup>1</sup> MemoryWeb, LLC (“Patent Owner” or “MemoryWeb”) filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). With our authorization, Petitioner filed a Preliminary Reply (Paper 9) and Patent Owner filed a Preliminary Sur-Reply (Paper 10). Based upon the record at that time, we instituted *inter partes* review on all challenged claims on the grounds presented in the Petition. Paper 12 (“Institution Decision” or “Dec.”).

<sup>1</sup> We refer to the present proceeding, *Samsung Electronics Co. Ltd. v. MemoryWeb, LLC*, IPR2022-00222, as “the *Samsung* proceeding,” “this proceeding,” or “the instant proceeding” to distinguish it from two other related proceedings challenging the ’228 patent. Those other proceedings are *Unified Patents, LLC v. MemoryWeb, LLC*, IPR2021-01413 (“the *Unified* proceeding” or “*Unified*”) and *Apple, Inc. v. MemoryWeb, LLC*, IPR2022-00031 (“the *Apple* proceeding”).

After institution, Patent Owner filed a Response (Paper 19, “PO Resp.”), Petitioner filed a Reply (Paper 24, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 30, “PO Sur-reply”).

On March 16, 2023, an oral hearing was held. A transcript of the hearing was made a part of this record. Paper 34.

In the *Unified* proceeding, which challenged claims 1–7 of the ’228 patent, the Board entered an Order (Paper 56 (confidential)) on March 8, 2023, identifying Samsung as an unnamed Real Party in Interest (the “RPI Order”), and on March 14, 2023, entered a Final Written Decision (Paper 58 (confidential)) finding claims 1–7 of the ’228 Patent unpatentable.

In an email to the Board dated March 15, 2023, counsel for Patent Owner requested authorization to file a motion to terminate the *Samsung* proceeding in light of the Board’s Final Written Decision in the *Unified* proceeding. Ex. 3006; *see also* Ex. 3002, 24:18–25:7, 38:16–41:6.

On March 31, 2023, a joint conference call was held with counsel from the *Unified*, *Samsung*, and *Apple* proceedings to discuss the impact of the Board’s Final Written Decision in the *Unified* proceeding. Ex. 3002. The topics discussed on the conference call included the Board’s RPI Order in the *Unified* proceeding, Patent Owner’s request to file a motion to terminate the *Samsung* proceeding, as well as issues related to real party in interest, waiver, estoppel and discovery, among others. *See id.*

On May 4, 2023, the Chief Administrative Patent Judge determined that good cause existed to extend the one-year period for issuing a Final Written Decision in this case in view of the limited time remaining before

expiration of the one-year period for issuing a Final Written Decision and under the unique circumstances of this case. Paper 35.

On May 18, 2023, we issued an Order extending the one-year pendency of this proceeding by up to six months. Paper 36.

On May 22, 2023, the Director issued a public version<sup>2</sup> of a Decision Granting Director Review (Paper 76, “Director’s Decision”) in the *Unified* proceeding, vacating-in-part the Final Written Decision (Section I.B) (Paper 58 (confidential) and Paper 67 (public)) and the Board’s Order identifying Samsung as an RPI (Paper 56 (confidential)) in that proceeding.

On June 1, 2023, we issued an Order directing the parties to confer and submit a proposed joint briefing schedule and discovery plan to address the waiver, RPI, and estoppel issues. Paper 37. The parties submitted their joint proposal by email on June 9, 2023. Ex. 3005.

On June 15, 2023, we issued an Order setting a briefing schedule for the parties to submit their arguments on the issues outlined in Exhibit 3005 (First Phase). Paper 45.<sup>3</sup>

On June 30, 2023, Patent Owner filed its opening brief on the issues of good cause, supplemental information, and additional discovery (Paper 40), and Petitioner filed its opening brief on the issues of waiver and estoppel (Paper 39).

<sup>2</sup> On May 16, 2023, a confidential version of the Director’s Decision Granting Director Review (Paper 74) was issued, but made available only to the parties and the Board.

<sup>3</sup> Paper 45 is the corrected version of the Conduct of Proceeding Order (Paper 38).

On July 14, 2023, Patent Owner filed its response brief on the issues of waiver and estoppel (Paper 43), and Petitioner filed its response brief on the issues of good cause, supplemental information, and additional discovery (Paper 42).

On August 22, 2023, we issued an Order setting a schedule for the parties to conduct discovery on the RPI issue, to brief Patent Owner's requested motion to terminate, to file motions to exclude, and for a second oral hearing (Paper 44).

With respect to Patent Owner's motion to terminate, Patent Owner filed its opening brief (Paper 52, "PO Mot. Term."), Petitioner filed an opposition (Paper 53, "Pet. Mot. Reply"), Patent Owner filed a reply (Paper 57, "PO Mot. Reply").

On November 20, 2023, a second oral hearing was held to permit the parties to address the issues of waiver, real party in interest, estoppel, and termination, among others Related Matters

The parties state that the '228 patent is related to the following U.S. Patents: 9,098,531 ("the '531 Patent"); 9,552,376 ("the '376 Patent"); 10,423,658 ("the '658 Patent"); 11,017,020 ("the '020 Patent"); 11,163,823 ("the '823 Patent"), and 11,170,042 ("the '042 Patent"). Paper 4, 2; Paper 11, 1. The parties further state that the '228 patent is related to pending U.S. Patent Application 17/459,933. Paper 4, 3; Paper 11, 2.

The parties identify the following as related district court matters:  
*MemoryWeb, LLC v. Apple Inc.*, No. 6:21-cv-00531 (W.D. Tex.);  
*MemoryWeb, LLC v. Samsung Electronics Co., Ltd. et al.*, No. 6:21-cv-0411

(W.D. Tex.); and *MyHeritage (USA), Inc. et. al. v. MemoryWeb, LLC*, No. 1:21-cv-02666 (N.D. Ill.). Paper 4, 2; Paper 11, 1.

As noted in the prior section of this decision, the parties identify the '228 patent as the subject the *Unified* proceeding and the *Apple* proceeding. The parties also identify the following related patents as the subjects of the following petitions: *Samsung Electronics Co., LTD. v. MemoryWeb LLC*, IPR 2022-00221 ('658 patent); *Apple Inc. v. MemoryWeb, LLC*, IPR2022-00032 ('376 patent); *Apple Inc. v. MemoryWeb, LLC*, IPR2022-00111 ('020 patent); *Apple Inc. v. MemoryWeb, LLC*, PGR2022-00006 ('020 patent); *Apple Inc. v. MemoryWeb, LLC*, IPR2022-00033 ('658 patent); and *Apple Inc. v. MemoryWeb, LLC*, IPR2022-00032 ('376 patent). Paper 4, 2–3; Paper 11, 1–2. Petitioner also identifies *Samsung Electronics Co., LTD. v. MemoryWeb LLC*, IPR2022-00885 ('823 patent); and *Samsung Electronics Co., LTD. v. MemoryWeb LLC*, PGR2022-00034 ('823 patent) as proceedings involving related patents. Paper 11, 1–2.

#### B. *The '228 patent*

The '228 patent for a “Method and Apparatus for Managing Digital Files” issued April 14, 2020. Ex. 1001, codes (45), (54). It “relates generally to the management of digital files and, more particularly, to a computer-implemented system and method for managing and using digital files such as digital photographs.” *Id.* at 1:21–24. The '228 patent purports to resolve a need for complementing “the widespread availability of digital files” by providing “a medium that allows people to organize, view, preserve and share these files with all the memory details captured, connected and vivified via an interactive interface.” *Id.* at 1:61–65.

Figure 41 of the '228 patent is reproduced below.

**FIG. 41**

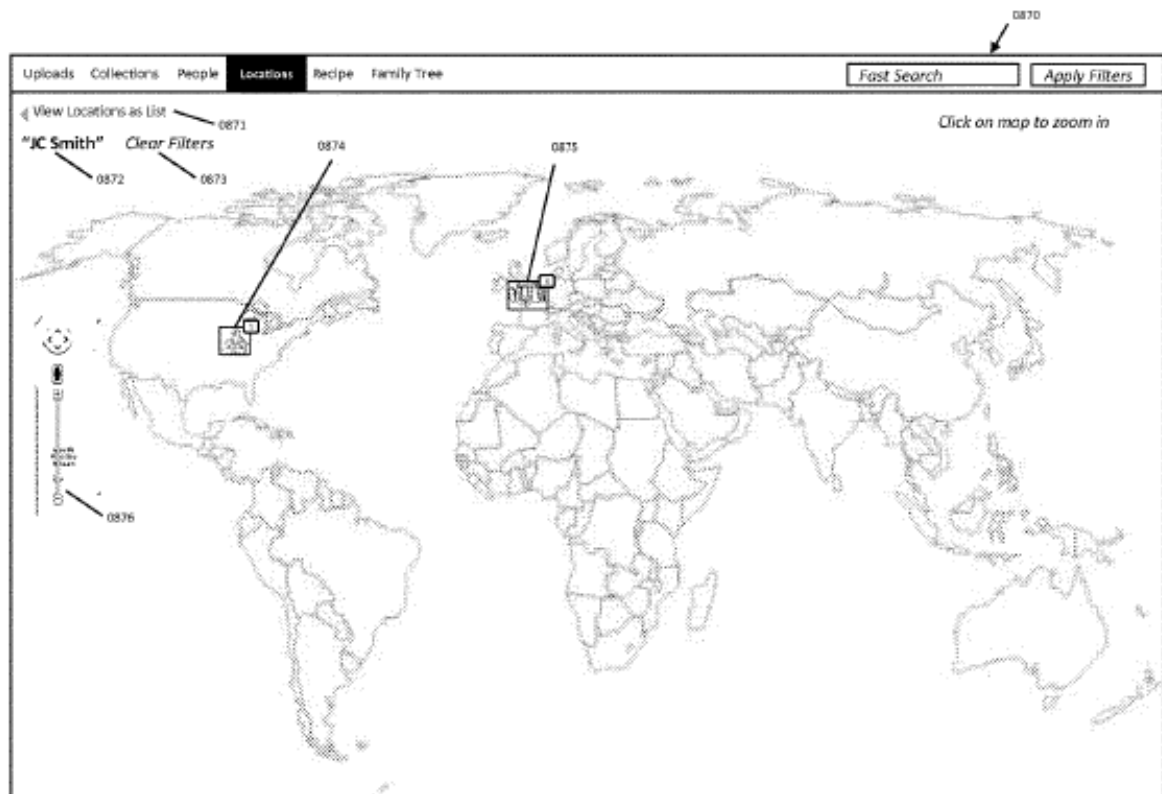


Figure 41 shows a screenshot of a Single Application Dot-Tag Filter in Location Application View that allows a user's access to digital files associated with a particular location. *Id.* at 4:7–8, 29:41–57. As shown in Figure 41, Location Application View 0870 displays Digital Files within an interactive map. *Id.* at Fig. 41, 29:41–44. Individual or groups of Digital Files are illustrated as photo thumbnails 0874, 0875 on the map and a user can zoom in and out or select the thumbnail to see all the Digital Files with the same location as depicted in Figure 34 below. *Id.* at Fig. 41, 29:48–55.

Figure 34 of the '228 patent is reproduced below.

**FIG. 34**

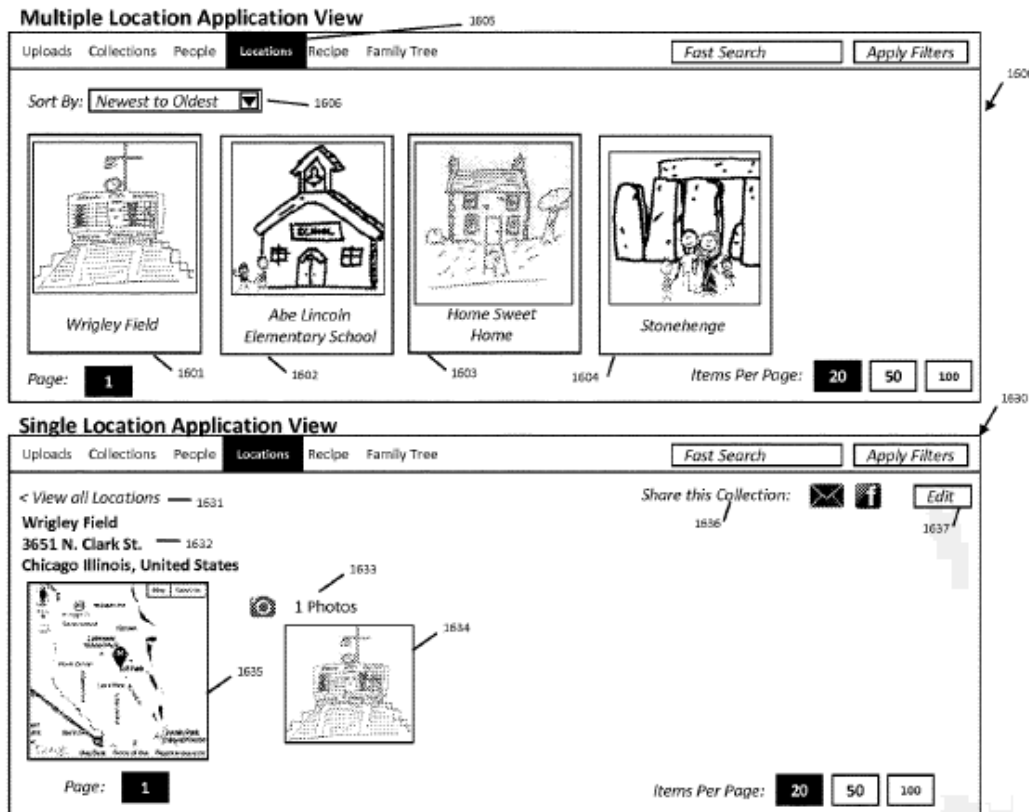


Figure 34 shows a screenshot of Location Application Views. *Id.* at 3:64. As shown in Figure 34, Location Application Views include a first Multiple Location Application View 1600 for displaying all the locations that were created within a user's Application. *Id.* at Fig. 34, 24:16–19. A second Single Location Application View 1630 is displayed when one of the thumbnails, for example, photo thumbnail 0874 from the Location Application View 0870 in Figure 41 is selected. *Id.* at Fig. 34, 29:48–52. In this example, displayed in the Single Location Application View 1630 are the individual location name 1632, thumbnails of each Digital File within specific collections such as one photo 1633 taken at Wrigley Field 1634 that

is associated with the location called Wrigley Field. *Id.* at Fig. 34, 24:37–43.

Figure 32 of the '228 patent is reproduced below.

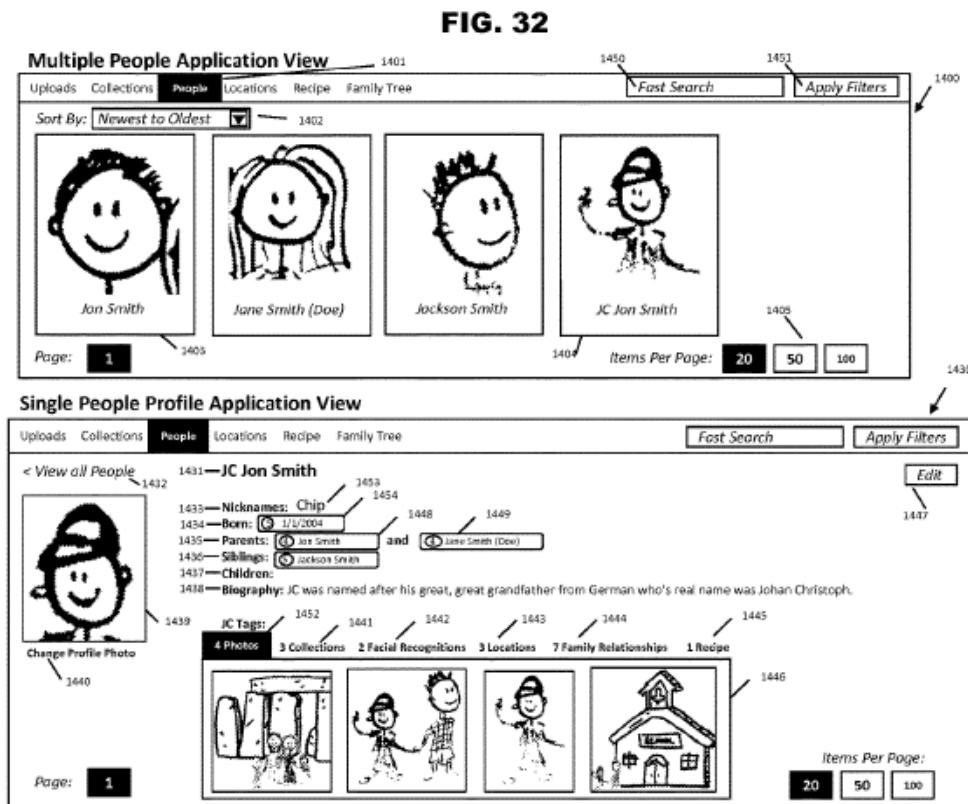


Figure 32 shows a screenshot of People Application Views. *Id.* at 3:62. As shown in Figure 32, People Application Views include a first Multiple People Application View 1400 for displaying all the people that were created within a user's Application, and can be selected by a user "from any Application Views within the Application." *Id.* at Fig. 32, 22:59–64. For each person, such as for Jon Smith as an example, a thumbnail 1403 for that person is shown. *Id.* at Fig. 32, 23:1–5. A second Single People Profile Application View 1430 can be displayed. *Id.* at Fig. 32, 23:12–13. This



example shows individual JC Jon Smith with the following information depicted: individual's name 1431, profile photo 1440 that can be changed, and a number of photos 1452 associated with that person along with thumbnail 1446 of each photo. *Id.* at Fig. 32, 23:13–25.

### C. *Challenged Claims*

Petitioner challenges claims 1–19. Pet. 1. Claim 1 is the sole independent claim. Ex. 1001, 35:32–36:11.

Claim 1 is reproduced below with Petitioner's limitation numbering<sup>4</sup> included for ease of reference.

[1pre] 1. A method comprising:  
 [1a] responsive to a first input, causing a map view to be displayed on an interface, the map view including:  
     [1b] (i) an interactive map;  
     [1c] (ii) a first location selectable thumbnail image at a first location on the interactive map; and  
     [1d] (iii) a second location selectable thumbnail image at a second location on the interactive map;  
 [1e] responsive to an input that is indicative of a selection of the first location selectable thumbnail image, causing a first location view to be displayed on the interface, the first location view including (i) a first location name associated with the first location and (ii) a representation of at least a portion of one digital file in a first set of digital files, each of the digital files in the first set of digital files being produced from outputs of one or more digital imaging devices, the first set of digital files including digital files associated with the first location;  
 [1f] responsive to an input that is indicative of a selection of the second location selectable thumbnail image, causing a second location view to be displayed on the interface, the second location view including (i) a second location name associated with the second location and (ii) a representation of at least a

<sup>4</sup> From Petitioner's Listing of Challenged Claims. Pet. v.

portion of one digital file in a second set of digital files, each of the digital files in the second set of digital files being produced from outputs of the one or more digital imaging devices, the second set of digital files including digital files associated with the second location; and

[1g] responsive to a second input that is subsequent to the first input, causing a people view to be displayed on the interface, the people view including:

[1h] (i) a first person selectable thumbnail image including a representation of a face of a first person, the first person being associated with a third set of digital files including digital photographs and videos;

[1i] (ii) a first name associated with the first person, the first name being displayed adjacent to the first person selectable thumbnail image;

[1j] (iii) a second person selectable thumbnail image including a representation of a face of a second person, the second person being associated with a fourth set of digital files including digital photographs and videos; and

[1k] (iv) a second name associated with the second person, the second name being displayed adjacent to the second person selectable thumbnail image.

Ex. 1001, 35:32–36:11.

**NON-PUBLIC VERSION—PROTECTIVE ORDER MATERIAL**

IPR2022-00222

Patent 10,621,228 B2

**D. *Asserted Ground of Unpatentability***

Petitioner asserts the following ground of unpatentability:

<b>Claim(s) Challenged</b>	<b>35 U.S.C. §<sup>5</sup></b>	<b>Reference(s)/Basis</b>
1–19	103(a)	Okamura, <sup>6</sup> Belitz <sup>7</sup>

Pet. 1.

**E. *Other Evidence***

<b>Declaration or Deposition</b>	<b>Date</b>	<b>Exhibit No.</b>
Declaration of Philip Greenspun, Ph.D.	December 3, 2021	Ex. 1003
Deposition of Glenn Reinman, Ph.D	November 16, 2022	Ex. 1040
Declaration of Philip Greenspun, Ph.D.	December 13, 2022	Ex. 1041
Declaration of Glenn Reinman, Ph. D.	March 16, 2021	Ex. 2001
Deposition of Philip Greenspun, Ph.D.	August 26, 2022	Ex. 2022
Declaration of Glenn Reinman, Ph.D.	September 6, 2021	Ex. 2023
Deposition of Kevin Jakel	May 26, 2022	Ex. 2062
Declaration of Kevin Jakel	December 30, 2021	Ex. 2071
Deposition of Kevin Jakel	September 7, 2023	Ex. 2085
Declaration of Youngmo Koo	September 17, 2023	Ex. 2099

---

<sup>5</sup> The Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103. The ’228 patent claims priority to Patent Application No. 13/157,214, providing an effective filing date of June 9, 2011. *See* Ex. 1001, code (63). Because this priority date is before the effective date of the applicable AIA amendments (March 16, 2013), we use the pre-AIA version of 35 U.S.C. §103 in this proceeding.

<sup>6</sup> Okamura et al., U.S. Patent Publication No. 2011/0122153 A1, published May 26, 2011 (Ex. 1005) (“Okamura”).

<sup>7</sup> Belitz et al., U.S. Patent Publication No. 2010/0058212 A1, published March 4, 2010 (Ex. 1006) (“Belitz”).

## II. ANALYSIS

### A. *Forfeiture/Waiver*<sup>8</sup>

#### 1. *Petitioner's Arguments*

Petitioner contends that Patent Owner has waived its ability to raise a real party in interest (“RPI”) issue in this proceeding. Paper 39.

Specifically, Petitioner contends that Patent Owner knowingly waived the RPI Issue (*id.* at 4–11), ignored PTAB Precedent (*id.* at 11–13), and should not be rescued from a predicament of its own making (*id.* at 13–15).

In support of these contentions, Petitioner asserts that following institution, Patent Owner had the opportunity to rebut the Board’s initial RPI determination by properly and timely addressing the RPI issue in its Patent Owner Response. Paper 39, 6. Petitioner asserts that instead of rebutting the Board’s initial determination, Patent Owner “chose to not say anything at all, providing **zero** evidence/argument to rebut the RPI identification as provided in this proceeding by [Petitioner] and as endorsed by the Board in the institution decision. *Id.* According to Petitioner, “[t]here can be no clearer case of forfeiture/waiver.” *Id.* (citing *Unified Patents, LLC, v. Gesture Technology Partners, LLC*, IPR2021-00917, Paper 32, 5 (PTAB Dec. 16, 2022) (emphasis omitted); *Google LLC v. Uniloc 2017 LLC*, IPR2020-00447, Paper 24, 9-10 n. 6 (PTAB May 11, 2021); Consolidated

<sup>8</sup> Petitioner observes that the Federal Circuit and the Board “often use the terms ‘waiver’ and ‘forfeiture’ interchangeably” when discussing these principles.” Paper 39, 4 (citing *In re Google Tech. Holdings LLC*, 980 F.3d 858, 862–863, n.8 (Fed. Cir. 2020)). For purposes of this decision, we use the terminology “waiver” or “waived.”

Trial Practice Guide (“CTPG”)<sup>9</sup> at 94). Petitioner also asserts that Patent Owner even more clearly manifested its unmistakable intent to forfeit/waive the RPI issue because in its Sur-reply Patent Owner simply chose to proclaim that estoppel would apply if the Board determined that Petitioner is an unnamed RPI in the *Unified* proceeding without addressing much less acknowledging Petitioner’s argument that RPI had not been brought into dispute in this proceeding. *Id.* at 7 (citing Paper 30, 33).

Petitioner notes that in the *Unified* proceeding, the initial institution decision (denying institution) was issued six months prior to Patent Owner’s filing of its Response in this proceeding. Paper 39, 7. Petitioner notes further that in the initial institution decision in the *Unified* proceeding, “the Board had declined to address the RPI issue because an RPI analysis was deemed to be not warranted in that proceeding as per ‘the Board’s precedential decision in *SharkNinja Operating LLC v. iRobot Corp.*, IPR2020-00734, Paper 11 at 18 (PTAB Oct. 6, 2020) (precedential).” *Id.* (citing *Unified*, Paper 15, 13). Petitioner also notes that “Director Vidal, in the Decision Granting Director Review, later confirmed the applicability of *SharkNinja*’s reasoning to the *Unified* proceeding. *Id.* at 8 (citing *Unified*, Paper 76, 5).

In view of these noted circumstances, Petitioner asserts that Patent Owner “knowingly and repeatedly refused to address the RPI issue in this proceeding” and that Petitioner’s “contention that it was not an RPI in the Unified IPR therefore stands unchallenged.” Paper 39, 9. In view of these

<sup>9</sup> Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

circumstances, Petitioner asserts further that its “only recourse appears to have been taking some sort of third party action in the Unified IPR—this assuming knowledge of papers and evidence under seal in that proceeding.” *Id.* at 10. In addition, Petitioner asserts that the party seeking to avail itself of relief must create a record and establish a baseline of evidence and create a reasonable opportunity for the party targeted by such relief to understand the allegation, and respond to it. *Id.* at 10.

In addition, Petitioner asserts that Patent Owner should have known by the institution date of the *Unified* proceeding that it was the wrong proceeding to challenge any alleged RPI issue involving Unified because even if Petitioner and Apple were unnamed RPI’s it would not create a time bar or estoppel under 35 U.S.C. § 315. Paper 38, 11–12 (citing *Unified*, Paper 15, 13). Petitioner asserts that Patent Owner repeatedly ignored the Board’s guidance and PTAB precedent and should not be excused from the plain notice and diligence requirements in PTAB proceedings. *Id.* at 14.

## 2. *Patent Owner’s Response*

Patent Owner responds that prior to the Director’s Decision in the *Unified* proceeding, nothing suggested that it would have to re-prove in this proceeding that Unified failed to name Petitioner as an RPI. Paper 43, 1. Patent Owner contends that Petitioner “cites no authority, prior to the Director Decision, dictating that [it] should have raised Unified’s incorrect RPI identification in *Unified* in this proceeding prior to issuance of the Unified FWD.”<sup>10</sup> *Id.* at 3 (citing *id.* at 6–11). Patent Owner contends

<sup>10</sup> Final written decision.

further that Petitioner’s complaint that Patent Owner’s arguments and evidence in the *Unified* proceeding were cloaked by seal and could not even be reviewed by Petitioner is disingenuous because Petitioner “is fully aware of its business and financial arrangements with Unified, including the terms and benefits of its membership agreement.” *Id.* at 4. Patent Owner also contends that Petitioner was also fully aware that Patent Owner challenged Unified’s failure to name Petitioner as an RPI in *Unified*. *Id.* In addition, Patent Owner contends that Petitioner’s claim that it prejudiced Petitioner “by ‘frustrating the efficiency and speed of IPR’ and adding ‘unanticipated costs and delay’ is also disingenuous” because Petitioner “fails to explain how any perceived delay actually prejudices it — especially as the Board has already found cause to extend the statutory deadline to December 13, 2023, and any delay allows [Petitioner] to maintain the stay of the district court litigation.” *Id.* at 4–5 (citing Paper 39, 2–3; Paper 35).

Patent Owner responds further that nothing in its Response or Sur-reply reflects an intentional waiver of its right to seek termination of this proceeding based on the final written decision in the *Unified* proceeding and Petitioner’s status as an unnamed RPI in that proceeding. Paper 43, 6 (citing *United States v. Olano*, 507 U.S. 725, 733 (1993)). Patent Owner asserts further that its Response and Sur-Reply “could not have intentionally relinquished or abandoned that right because the right did not exist until the Unified FWD issued on March 14, 2023.” *Id.* (citing *id.* at 2). In addition, Patent Owner asserts that it has timely requested authorization to seek relief based on the final written decision in the *Unified* proceeding. *Id.* (citing *Olano*, 507 U.S. at 733).

Patent Owner also responds that Petitioner mischaracterizes *SharkNinja*. Paper 43, 12. According to Patent Owner, “[i]n *SharkNinja*, the Board declined to address the patent owner’s RPI arguments ***at the institution stage***, in part, because there was ‘no allegation or evidence that’ the unnamed RPI was ‘barred or estopped’ or ‘purposely omitted . . . to gain some advantage.’” *Id.* (citing *SharkNinja*, Paper 11, 19). Petitioner asserts further that “*SharkNinja* did not hold that the Board must decline to address the petitioner’s failure to identify all RPIs in the final written decision” and that “the Director Decision represents a significant expansion of the reasoning in *SharkNinja* and constitutes new guidance or an intervening change in the law, which supplies good cause to excuse any untimeliness on” Patent Owner’s part. *Id.* (Paper 40, 7–10).

In addition, Patent Owner responds that Petitioner mischaracterizes the Institution Decision in the *Unified* proceeding. Paper 43, 13. According to Patent Owner, “[t]he *Unified* Institution Decision merely explained that ‘an RPI analysis is not required ***at institution***’ – it did not indicate that the Board would not perform an RPI analysis in its final written decision.” *Id.* (citing *Unified*, Paper 15 as 13–14). Patent Owner responds further that Petitioner’s mischaracterization of the Institution Decision in the *Unified* proceeding is also belied by the RPI Order in that proceeding, where the Board discussed *SharkNinja* yet decided the RPI issue. *Id.* (citing Ex. 2038, 3, 5–6). Patent Owner asserts that the Board’s RPI Order refutes Petitioner’s spurious claim that Patent Owner ignored clear PTAB precedent. *Id.* (citing Paper 39, 13). Moreover, according to Patent Owner, “if *SharkNinja* was



such ‘clear’ precedent, then Unified surely would have cited it in *Unified*.”  
*Id.*

### 3. Discussion

After considering the evidence and the arguments of the parties, we determine that the weight of the evidence establishes that Patent Owner has not waived any right it may have to raise the RPI issue or assert estoppel under 35 U.S.C. § 315(e)(1) in this proceeding.

#### a) Notice

35 U.S.C. § 312 (a)(2) states that “[a] petition filed under section 311 may be considered only if . . . the petition identifies all real parties in interest.” 37 C.F.R. § 42.8 (b)(1) of the Board’s rules regarding mandatory notices also requires that the petition “[i]dentify each real party-in-interest for the party.”

Citing 35 U.S.C. § 312, Patent Owner first alleged in its Patent Owner Preliminary Response in the *Unified* proceeding filed on December 12, 2021, that “the Petition fails to name all real parties-in-interest (“RPIs”), including at least Samsung and Apple, and should therefore be denied.” *See Unified*, Paper 8, 22. Patent Owner repeated this same allegation in the *Unified* proceeding approximately six months later in its Response filed on June 6, 2022. *See Unified*, Paper 23, 14 (“the Board should terminate this proceeding because Petitioner has failed to name all real parties-in-interest (“RPIs”), including at least Samsung and Apple”). The question thus becomes whether Patent Owner properly noticed Petitioner it was alleging that Petitioner was an unnamed RPI in the *Unified* case, so that Petitioner would have fair notice and an opportunity to respond.

In this proceeding, Patent Owner stated in its Response that it had “asked the Board to determine that Petitioner is an unnamed RPI” in the *Unified* proceeding. PO Resp. 64 (citing Ex. 2021, 18–26). Patent Owner further requested that Petitioner be estopped from maintaining this proceeding if the final written decision in the *Unified* proceeding determined that Petitioner was an unnamed RPI in that proceeding. *Id.* Patent Owner maintained its position that Petitioner was an unnamed RPI in the *Unified* proceeding in its Sur-reply where it reiterated its position that if Petitioner is found to be an unnamed RPI in the *Unified* proceeding it should be estopped from maintaining this proceeding. PO Sur-reply 33. Thus, Petitioner was clearly on notice that its RPI status in the *Unified* proceed was at issue in this proceeding.

*b) Estoppel*

Our rules provide that “[a] party should seek relief promptly after the need for relief is identified.” 37 C.F.R. § 42.25(b) (2023). As outlined above, Patent Owner clearly indicated its intent to request estoppel if Petitioner was found to be an RPI in the *Unified* proceeding in its Response and Sur-reply. Thus, Patent Owner did not waive its right to request that Petitioner be estopped in this proceeding. Moreover, we agree with Patent Owner that the issue in this proceeding is not whether Petitioner is an RPI in this proceeding (as it surely must be), but whether Petitioner should be estopped from maintaining this proceeding because it is an unnamed RPI in the *Unified* proceeding.

*c) Timing*

The circumstances of this proceeding are unique in that neither the parties nor the Board could have known, prior to the Director's Decision, that the Director would vacate the Board's RPI order in the *Unified* proceeding. Petitioner asserts that Patent Owner should have submitted its evidence that Petitioner was an unnamed RPI in the *Unified* proceeding when it noticed Petitioner that RPI was at issue in that proceeding. We disagree. At the time Patent Owner filed its Response and Sur-reply it appeared that the question of whether or not Petitioner was an RPI in the *Unified* proceeding would be resolved in that proceeding. We do not agree with Petitioner that Patent Owner should have known at the time that it filed its Response and Sur-reply in this case that the precedent set forth in *SharkNinja* would be extended to preclude the Board's consideration of the RPI issue in its final written decision in the *Unified* proceeding.

For these reasons, we determine that Patent Owner has not waived its right to raise a real party in interest issue in this proceeding.

*B. Real Party in Interest*

Petitioner states that "Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. are the real parties in interest." Pet. 92. Patent Owner states that it, MemoryWeb, LLC, is the real party in interest. Paper 4, 2.

Whether Petitioner is a RPI in this proceeding is not at issue. At issue is whether Petitioner is an unnamed RPI in the *Unified* proceeding.

a) *Legal Principles*

We authorized discovery and briefing to allow the parties to address this issue. Paper 44; Paper 45. Our regulations require that parties “[i]dentify each real party-in-interest for the party” as part of its mandatory notices, and to timely update any change in the information provided in those notices. 37 C.F.R. §§ 42.8(a), (b)(1) (2023). The parties have a duty of candor and good faith when they comply with the requirements set forth in Section 42.8. *See* 37 C.F.R. § 42.11(a) (2023) (stating that parties have a duty of candor and good faith in proceedings).

The mandatory notice provision requiring the identification of all real parties in interest serves important notice functions to patent owners, to identify whether the petitioner is barred from filing a petition because of a real party in interest that is time-barred or otherwise estopped, and to the Board, to identify conflicts of interests that are not readily apparent from the identity of the petitioner. *See NOF Corp. v. Nektar Therapeutics*, IPR2019-01397, Paper 24 at 6 (PTAB Feb. 10, 2020) (citing Patent Trial and Appeal Board Consolidated Trial Practice Guide 12 (Nov. 2019) (“TPG”)).<sup>11</sup>

Whether a non-party is an RPI is a “highly fact-dependent question” and must be considered on a case-by-case basis. *Ventex Co. v. Columbia Sportswear N. Am., Inc.*, IPR2017-00651, Paper 152 at 6 (PTAB Jan. 24, 2019) (precedential). With respect to a petition’s identification of real parties in interest, the Federal Circuit has stated that

<sup>11</sup> Available at <https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf?MURL=>

[a] petition is presumed to identify accurately all RPIs. *See Zerto, Inc. v. EMC Corp.*, Case IPR2014-01295, slip op. at 6–7 (PTAB Mar. 3, 2015) (Paper 34). When a patent owner provides sufficient evidence prior to institution that reasonably brings into question the accuracy of a petitioner’s identification of RPIs, the overall burden remains with the petitioner to establish that it has complied with the statutory requirement to identify all RPIs.

*Applications in Internet Time, LLC v. RPX Corp.*, 897 F.3d 1336, 1343 (Fed. Cir. 2018) (“*AIT*”). In a slightly later case, the Federal Circuit also stated that

[a] “petitioner’s initial identification of the real parties in interest should be accepted unless and until disputed by a patent owner.” *Worlds Inc. v. Bungie, Inc.*, 903 F.3d 1237, 1243 (Fed. Cir. 2018). To dispute it, the patent owner “must produce *some* evidence that tends to show that a particular third party should be named a real party in interest.” *Id.* at 1244.

*VirnetX Inc. v. Mangrove Partners Master Fund, Ltd.*, 778 Fed. Appx. 897, 902 (Fed. Cir. 2019) (“*VirnetX*”).

#### *b) Threshold Question*

Given this direction, we must first consider the threshold question of whether Patent Owner has produced “some evidence that tends to show that a particular third party should be named a real party in interest” and whether that evidence “reasonably brings into question the accuracy of a petitioner’s identification of RPIs” in the Petition at issue. *AIT*, 897 F.3d at 1343. We also keep in mind that “the overall burden remains with the petitioner to establish that it has complied with the statutory requirement to identify all RPIs.” *Id.*

In the *Unified* proceeding, Unified, as part of its mandatory notice obligations, identified itself as the only real party in interest. *Unified*,

Paper 2, 1. After filing its Petition in the *Unified* proceeding, Unified updated its mandatory notices four times, but on each occasion indicated that “[n]o updates to the real party-in-interest . . . are made at this time.” See *Unified*, Papers 6, 14, 17, 39. Patent Owner disputes Unified’s identification of itself as the only real party in interest, and requests that the Board determine that Petitioner is an unnamed RPI in the *Unified* proceeding. PO Resp. 64. To support this contention, Patent Owner points to evidence (summarized in Section II.B.c.1 below) regarding Unified’s business model, suggesting that the *Unified* proceeding was filed at Petitioner’s request, suggesting that Unified operates for the benefit of its members, suggesting that Petitioner desired *inter partes* review of the ’228 patent and benefited from this review, regarding Unified’s interest in the *Unified* proceeding, and suggesting communications and coordination between Petitioner and Unified. PO Mot. Term. 10–27. Taken together this evidence reasonably calls into question the accuracy of Unified’s identification of itself as the sole RPI in the *Unified* proceeding.

*c) Identification of Real Parties in Interest in the Unified Proceeding*

Having resolved the threshold question, we now consider the question of whether Unified complied with its obligation to “[i]dentify each real party-in-interest.” 37 C.F.R. §§ 42.8 (2023); *AIT*, 897 F.3d at 1343 (“the overall burden remains with the petitioner to establish that it has complied with the statutory requirement to identify all RPIs”). As stated by the Federal Circuit, “[d]etermining whether a non-party is a ‘real party in interest’ demands a flexible approach that takes into account both equitable

and practical considerations, with an eye toward determining whether the non-party is a clear beneficiary that has a preexisting, established relationship with the petitioner.” *AIT*, 897 F.3d at 1351.

In *RPX Corp. v. Applications in Internet Time, LLC*, IPR2015-01750, Paper 128, 24–25 (PTAB Oct. 2, 2020) (“*AIT II*”), the Board considered a number of factors to determine whether an unnamed third-party should have been named as an RPI in a proceeding. The factors<sup>12</sup> relevant to the inquiry here would include: (a) Unified’s business model, including the nature of Unified as an entity; (b) Unified’s interests in the *Unified* proceeding; (c) whether, and under what circumstances, Unified takes a particular member’s interests into account when determining whether to file IPR petitions; (d) Petitioner’s relationship with Unified; (e) Petitioner’s interest in and potential benefit from the IPR and whether Unified can be said to be representing that interest; (f) whether Petitioner actually desired review of the ’228 patent;<sup>13</sup> (g) any communications or coordination between Unified and Petitioner;<sup>14</sup> and (h) whether Petitioner funded, directed, influenced, or

<sup>12</sup> We recognize that some of the factors we consider, such as “control,” are not among the enumerated factors listed in the “Factual Findings” section of the *AIT II* decision. See *AIT II*, Paper 128 at 10. However, the issue of “control” is discussed in the “Analysis” section of that case and these factors are relevant to the RPI inquiry here. See *id.* at 32–33; see also *TPG* at 15–17.

<sup>13</sup> In Section II.B.5.e below we discuss Petitioner’s desire for review of the ’228 patent as part of our discussion of Petitioner’s interest in and potential benefit from the *Unified* proceeding.

<sup>14</sup> In Section II.B.5.d below we discuss communications and coordination between Unified and Petitioner as part of our discussion of Petitioner’s relationship with Unified.

exercised control over Unified's participation in the *Unified* proceeding. *See AIT II*, Paper 128 at 10 (citing *AIT*, 897 F.3d at 1358)5; *TPG* at 12–18.

(1) *Patent Owner's Contentions*

Patent Owner contends that in return for the payment of large sums of money to fund challenges, Unified monitors court filings and selectively challenges patents to benefit its members. PO Mot. Term 27. Patent Owner contends that although Unified picks the targets, its IPR petitions are filed to benefit its financiers like Petitioner. *Id.* Patent Owner contends further that Petitioner should have been named an RPI in the *Unified* proceeding, because it [REDACTED]

[REDACTED]. *Id.* Patent Owner makes six arguments in support of these contentions, which we summarize below.

(a) *Unified's Business Model*

Patent Owner contends that Unified's Business Model shows that Petitioner is an unnamed RPI in the *Unified* proceeding. PO Mot. Term. 10. To support this contention, Patent Owner points to evidence indicating that Unified uses a business model that gives the appearance of independence from its member, while enabling Unified to file requests for *inter partes* reviews that directly benefits its members without having to name the benefited members as RPIs. *Id.* Specifically, Petitioner points to Unified's agreement with Patent Owner to file validity challenges, fees paid by Patent Owner and others to fund these challenges, and the amount of its budget that Unified spends on validity challenges. *Id.* at 10–15.



(i) *Alleged Agreement to File  
Validity Challenges*

According to Patent Owner, “Unified operates as a membership organization wherein member companies, such as Samsung, enter into Unified’s ‘Membership Agreements’ and pay Unified ‘annual, non-refundable, membership fees’ in exchange for Unified’s services.” PO Mot. Term. 10 (citing Ex. 2067, 4; Ex. 2074, 20). Patent Owner contends that “Unified’s Membership agreements provide, in relevant part, that Unified

[REDACTED]  
[REDACTED]  
[REDACTED]” with the result that “[REDACTED]  
[REDACTED]” Patent Owner. *Id.* at 11 (citing Ex. 2067,<sup>16</sup> 4). Patent Owner contends further that “Unified has advertised that its operating structure ‘provides **complete alignment** between Unified Patents and its member companies.’” *Id.* at 11–12 (citing Ex. 2057, 1; 2088, 5).

(ii) *Fees Paid by Samsung and  
Others to Fund Validity Challenges*

Patent Owner contends that membership fees, such as those paid by Samsung, fund validity challenges, such as the *Unified* proceeding. PO Mot. Term. 12 (citing Ex. 2085. 33:11–34:5). Patent Owner points to Mr. Jakel’s<sup>17</sup> testimony that, [REDACTED]  
[REDACTED]

<sup>15</sup> Non-practicing entities.

<sup>16</sup> Patent Owner cites Ex. 2073, which is the exhibit number for this exhibit in the *Apple* proceeding. In this proceeding the exhibit number is 2067.

<sup>17</sup> Mr. Jakel is the CEO of Unified Patents, LLC.

IPR2022-00222

Patent 10,621,228 B2

[REDACTED].  
*Id.* (citing Ex. 2085, 29:21–30:8, 31:18–32:17; Ex. 2062, 35:10–23). Patent Owner further contends that Patent Owner “became a Unified member in

[REDACTED]  
 [REDACTED].”  
*Id.* at 13 (citing Ex. 2085, 57:2–21; E. 2067, 14; E. 2071 ¶ 20).

(iii) *Unified’s Spending on  
 Member-Funded Validity  
 Challenges*

Patent Owner contends that less than two months after Unified filed the *Unified* proceeding, as part of enticing Petitioner to renew its subscription, Unified [REDACTED]  
 [REDACTED]” PO Mot. Term. 13 (citing Ex. 2078<sup>18</sup>; Ex. 2077, 19). Patent Owner asserts that Unified’s “[REDACTED]  
 [REDACTED]  
 [REDACTED]” *Id.* at 13–14 (citing Ex. 2077, 19). Patent Owner asserts further that [REDACTED]  
 [REDACTED]  
 [REDACTED].” *Id.* at 14 (citing Ex. 2085, 110:11–18). In addition, according to Patent Owner, [REDACTED]  
 [REDACTED]  
 corresponds to [REDACTED] on Unified’s ‘in-house’ legal team.” *Id.* (citing Ex. 2085, 11:15–12:4). Noting that “Mr. Jakel estimated

<sup>18</sup> Patent Owner refers to page 49 of Ex. 2078, however, Ex. 2078 is a one-page email. Thus, it appears that the reference to page 49 of this exhibit is in error.

that Unified's in-house legal team [REDACTED]  
 [REDACTED] Patent Owner contends that "[REDACTED]  
 [REDACTED]  
 [REDACTED]" *Id.* at 14–15 (citing Ex. 2085, 112:23–113:9).

*(b) Allegation That Unified Files Petitions at  
 Petitioner's Behest*

Noting that "a 'non party to an IPR can be a real party in interest, even without entering into an express or implied agreement with the petitioner to file an IPR petition,'" Patent Owner contends that "Unified cannot credibly deny that its business model [REDACTED]  
 [REDACTED]  
 [REDACTED] on validity challenges benefiting its members." PO Mot. Term. 15–16 (citing *AIT*, 897 F.3d at 1354).

Patent Owner contends [REDACTED] validity challenges are the primary value proposition Unified offers and refers to actions Unified took before and after filing its petition in the *Unified* proceeding as an example. *Id.* at 16–17. Patent Owner then explains how [REDACTED]  
 [REDACTED] membership renewal date approaches [REDACTED] at 17. According to Patent Owner, [REDACTED]  
 [REDACTED]. Patent Owner admits that [REDACTED] Unified's monitoring of technology sectors and data analytics, but asserts that these actions are merely ancillary to its purpose and "are not what members pay for." *Id.* at 18. Patent Owner points to Mr. Jakel's testimony

that “Unified engages in these activities ‘on behalf of’ a zone (including members such as [Petitioner]), and hopes Unified’s ‘members appreciate that work’ and will “continue to remain members” in support of these contentions. *Id.* at 18–19 (citing Ex. 2085, 89:9–12; Exs. 2083–2084).

*(c) Allegation that Petitioner Desired Review of the '228 Patent and Has Benefited From this Review*

Patent Owner contends that Petitioner desired review of the '228 patent as evidenced by the fact that it filed the instant Petitioner not long after the *Unified* proceeding was filed. PO Mot. Term. 19. Patent Owner also contends that Unified’s argument that it does not and cannot know if Petitioner benefits from the *Unified* proceeding is not credible because Petitioner benefits if Unified prevails in canceling claims of the '228 patent asserted against Petitioner in district court. *Id.* (citing; *AIT*, 897 F.3d at 1363).

Patent Owner contends further that Unified must have expected to derive some benefit from directly challenging the '228 patent itself based on the benefit conferred on Petitioner because [REDACTED]. PO Mot. Term. 19. Patent Owner contends further that “Unified’s documents acknowledge the alignment of interests and benefits between Unified and its member companies,” and its “website touts [that] its strategic operational structure ‘provide[s] complete alignment between Unified Patents and its member companies.’” *Id.* at 20 (citing Ex. 2057, 1).

*(d) Allegation That Unified Operates for the Benefit of its Members*

Patent Owner contends that “Unified has claimed it filed the Unified IPR ‘to deter the use of invalid patents in its Content Zone, not to protect the interests of any one member,’” but “Unified has not explained why, among the countless other patents being enforced in Unified’s ‘Content Zone,’ Unified chose to challenge *this* ’228 patent or only claims 1–7.” PO Mot. Term. 20 (citing Ex. 2071 ¶ 18). Patent Owner contends that “Unified’s rationale makes no sense when viewed in the greater context required in an RPI/privy determination. If it succeeds in that challenge, the public who it professes to protect (including its members) would still face potential liability for claims 8–19” whereas if Petitioner succeeds “all claims will be invalid and no entity (Unified member or not) will face potential liability.” *Id.* at 20–21. According to Patent Owner, “[t]he only logical conclusion is that Unified orchestrated campaigns challenging only a subset of claims, while allowing its members to challenge every claim, to harass patent owners it deems unworthy of patent protection. *Id.* at 21 (citing Trial Practice Guide, 77 Fed. Reg. 48756, 48759 (Aug. 14, 2012)).

Patent Owner further contends that “simply because Unified may have filed [its Petition in the *Unified* proceeding] to ‘deter the use of invalid patents in its Content Zone,’ does not mean that Unified did not recognize, understand, and fully appreciate that it was choosing to challenge a patent that was already being enforced against” Petitioner. PO Mot. Term. 21 (citing Ex. 2071 ¶ 18). Patent Owner asserts that “Mr. Jakel acknowledged that Unified first learned about the ’228 patent precisely because it was

IPR2022-00222

Patent 10,621,228 B2

being enforced against Samsung . . . in district court.” *Id.* (citing Ex. 2085, 63:20–64:17).

In addition, Patent Owner contends that “Unified’s settlement strategy further confirms that it acts on behalf of its members rather than deterring the use of invalid patents against all members and nonmembers alike practicing in a technology zone” as evidenced by the fact that “[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]” *Id.* at 21–22 (citing Ex. 2085, 226:25–228:8). According to Patent Owner,

[REDACTED]

*Id.* at 22.

*(e) Unified’s Interest in the Unified Proceeding*

According to Patent Owner, “[t]he Federal Circuit has instructed that a petitioner’s ‘own interest’ in an IPR is relevant to the RPI inquiry” and “[t]he Board has found that when a petitioner (1) ‘selects patents to challenge, at least in part, to reduce risk to existing clients’ and (2) has no ‘risk of liability for infringement of the patents at issue,’ these facts support a conclusion that their client is an RPI.” PO Mot. Term. 22 (citing *AIT*, 897 F.3d at 1354; *AIT II*, Paper 128, 16–17). Patent Owner contends “[t]hat is precisely the case here: Unified faces no risk of liability and it selected

the ‘228 patent based at least in part on the . . . Samsung litigation[.]” and its “interest in this IPR is to attempt to sell its current members on renewing their membership or to attract new paying members.” *Id.* (citing *id.* at 15–19;<sup>19</sup> Ex. 2077, 28).

*(f) Alleged Communications or Coordination  
With Petitioner*

Patent Owner contends that it is clear that Unified carefully devised its operations in view of the *AIT II* case law to avoid communications about a forthcoming IPR challenging a patent asserted against one of its members for the sole purpose of avoiding having to name the member as an RPI. PO Mot. Term. 23–24 (citing *AIT II*, Paper 128, 17–20). In support of this contention, Patent Owner asserts that “Mr. Jakel has stated [that] ‘Unified Patents is well-aware of these issues, and has carefully structured [its] solution to comply with all of the existing legal requirements to file administrative challenges as the sole RPI.’” *Id.* at 24 (citing Ex. 2052, 1).

Patent Owner contends further that although “Mr. Jakel claims Unified acts ‘to benefit the zone and the technology area,’ that it is ‘not about the individual members’ and that he has ‘no knowledge about whether or not’ his paying members wish to avoid estoppel,” “Unified’s filing habits since the time of the RPI order [in the *Unified* proceeding] suggest otherwise.” *Id.* at 24–25 (citing Ex. 2085, 90:14–23, 177: 1–5) (footnote omitted). According to Patent Owner, “Docketnavigator.com reveals that

<sup>19</sup> Patent Owner cites section 5.IV.A.2; however, there is not such section in this Motion. We assume that the leading “5” in the citation is a typographical error.

Unified filed one or more IPR petitions each calendar month since March 2021, but this practice immediately stopped the moment the RPI Order issued March 8, 2023 and has not resumed for the past six months.” *Id.* at 25 (citing Ex. 2089).

In addition, Patent Owner contends that [REDACTED]  
[REDACTED]  
[REDACTED], Unified still promotes the success of its patent validity challenges [REDACTED]  
[REDACTED]” PO Mot. Term. 25 (citing Ex. 2059, 1; Ex. 2019, 11). Patent Owner asserts that “[s]uch conduct suggests that Unified acts for the financial benefit of its members [REDACTED]  
[REDACTED]  
[REDACTED]” and that “[t]his indicates that Unified has crafted its membership agreements and its communication protocols with an eye to avoid naming members as RPIs.” *Id.* at 25–26. According to Patent Owner, “[t]his creates an obvious advantage for Unified’s members because it allows Unified to act as a proxy for its members interests while attempting to avoid naming its members as an RPI, thus insulating Unified’s members from being subjected to the statutory estoppel provisions of 35 U.S.C. § 315(e).” *Id.*

Turning back to its consideration of Unified’s interest in the *Unified* proceeding, Patent Owner contends that “[w]hether they are called ‘clients’ or ‘members,’ Unified challenges patents to reduce or eliminate risk to members like [Petitioner]. Indeed, reducing members’ litigation risk by challenging patents is the ‘sole purpose’ of Unified’s primary business,



weighing in favor of finding [Petitioner] to be an RPI” in the *Unified* proceeding. *Id.* at 26 (citing Ex. 2071 ¶ 5).

(2) *Petitioner’s Reply to Patent Owner’s Motion to Terminate*

Petitioner asserts that it is not a real party in interest in the *Unified* proceeding. Pet. Mot. Reply 1. According to Petitioner, there is no evidence to suggest that the *Unified* proceeding was filed at Petitioner’s behest or with its control, that no communications occurred between Petitioner and Unified, and that Petitioner did not direct the filing of the *Unified* proceeding. *Id.*

(a) *Unified’s Business Model*

Petitioner asserts that “Unified’s business model, which the PTAB has consistently viewed as failing to create an RPI relationship with its members, endeavored to ‘comply with the real party-in-interest rules from day one’ and allow Unified to conduct its ‘own independent business which is deterrence[.]’” Pet. Mot. Reply 13 (citing Ex. 2085, 86:14–87:12, 212:18–215: 23; *Unified Pats., LLC v. Cellular Commc’ns Equip. LLC*, IPR2018-00091, Paper 33, 11–12 (PTAB May 22, 2019) (“*CCE*”); *Unified Patents Inc. v. Bradium Techs. LLC*, IPR2018-00952, Paper 31, 8-9 (PTAB Dec. 20, 2018)) (“*Bradium*”). Petitioner asserts that nothing has changed in how Unified goes about its business and its business model remains focused on deterrence of NPE activity. Pet. Mot. Reply 13–14. In support, Petitioner points to Mr. Jakel’s testimony “

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].” Pet. Mot. Reply 14 (citing Ex. 2085, 2241:25–242:9). Thus, according to Petitioner “Unified’s view toward settlements are aligned with its general objective of deterring NPE activity.” *Id.*

In addition, Petitioner asserts that contrary to Patent Owner’s contentions, filing invalidity challenges is just one of various different deterrence activities that Unified regularly engages in. Pet. Mot. Reply. 14 (citing Ex. 2085, 185:12–187:18; Ex. 2057, 1; Ex. 2088, 5).

*(b) Response to Allegations That Unified Files Petitions at Petitioner’s Behest, That Petitioner Has Benefited From the Unified Proceeding, and That Unified Operates for the Benefit of its Members*

Petitioner asserts that Patent Owner has not established that the *Unified* proceeding was filed at its behest. Pet. Mot. Reply 5–6, Pet. Sur-reply 5–6. Petitioner asserts that the testimony of Mr. Koo “did not equivocate in clarifying that [it] ‘did not have any interactions with Unified regarding its decision to file the Unified IPR or its choice of particular claims to challenge’” and that it “‘did not give any input to Unified concerning its decision to challenge the ’228 Patent’ and further ‘did not give any input to Unified in its preparation of the Unified IPR.’” Pet. Mot. Reply 6 (citing Ex. 2099 ¶¶ 4–5). Petitioner asserts further that this “testimony is wholly consistent with that given by Unified’s Mr. Kevin Jakel, who confirmed that [REDACTED] [REDACTED] [REDACTED] and that it’s strictly ‘Unified’s decision to use challenges as a deterrence tool or not.’” *Id.* (citing Ex. 2085,

158:20–159:2). In addition, Petitioner asserts that “in the now vacated RPI Order, this panel acknowledged that ‘Unified’s members do not exercise direction or control over Unified’s decisions to contest patents and its filings’ and that ‘[t]here is no evidence of overt direction or control by Unified’s members in the record.’” Pet. Mot. Reply at 6–7 (citing Ex. 2074, 26).

Petitioner also asserts that “[t]he Board has repeatedly considered similar facts in previous cases involving Unified and consistently came to the logical conclusion that Unified did not act on its members’ behest and further that it was not in an RPI relationship with its members.” Pet. Mot. Reply 7 (citing *Unified Patents, LLC v. American Patents, LLC*, IPR2019-00482, Paper 115, 46–47 (PTAB Aug. 6, 2019) (“*American Patents*”); *Charles Alan Wright, Arthur R. Miller & Edward H. Cooper, Federal Practice & Procedure* § 4449). Petitioner asserts further that it did not benefit from Unified’s actions any more than others in the zone. *Id.* Petitioner asserts that in a case like this, where Petitioner

was not subject to any time-bar preventing them from filing its own petition, “a benefit to a member from an IPR filed by [Unified] must be weighed against the benefit that member receives from filing its own IPR in which that member can control the prior art references chosen, the counsel used, the amount of money spent, and whether or not to settle the case.”

*Id.* at 8 (citing *Unified Patents Inc. v. Bradium Techs. LLC*, IPR2018-00952, Paper 31, 10-11 (PTAB Dec. 20, 2018)).

Concerning the benefits to itself, Petitioner asserts that it sees limited benefit because it decided to independently challenge a different claim set than that challenged in the *Unified* proceeding to protect its own interests.

Pet. Mot. Reply 8 (citing Ex. 2099 ¶ 5). Petitioner asserts that in the co-pending district court case Patent Owner could simply choose to drop claims 1–7 (the claims challenged in the *Unified* proceeding) from its contentions and Petitioner would be left to defend itself against claims 8–19 (which were not challenged in the *Unified* proceeding). *Id.* at 9. According to Petitioner, not only would Unified’s success in invalidating claims 1–7 have very little positive impact, the potential of Unified’s departure from its desired claim construction as well as other strategic considerations could in reality end up hurting Petitioner in the district court litigation. *Id.* Petitioner asserts that if the *Unified* proceeding was designed to benefit it, “as opposed to merely creating a general deterrence effect against NPEs in the zone, Unified would have challenged all asserted claims 1-19” and that Unified’s “failure to do so reflects true independence in Unified’s actions and not some attempt at gaming the system.” *Id.*

In support of these assertions, Petitioner points to Mr. Jakel’s testimony that “Unified regularly challenges patents that are not asserted against any of its member companies” and that “non-members often derive more benefit from Unified’s challenges than do its paying members.” Pet. Mot. Reply 9 (citing Ex. 2085, 210:7–212:8). Petitioner also points to Mr. Jakel’s testimony that “the only ‘alignment’ between Unified and its members . . . lies in the common goal of deterring NPEs from improperly asserting low-quality and overbroad patents and providing an alternative to ‘litigation against NPEs.’” *Id.* at 10 (citing Ex. 2085, 197:6–199:10; Ex. 2088, 5).

*(c) Response to Allegation That Unified  
Communicates and Coordinates With Petitioner*

Petitioner asserts that Patent Owner has not established the factual predicate to support a finding that any relevant communication/coordination occurred between it and Unified. Pet. Mot. Reply 10. According to Petitioner, undisputed evidence shows that there was no communication or coordination between it and Unified during the time period leading up to the filing of *Unified* proceeding (or the instant proceeding). *Id.* (citing PO Mot. Term. 23–24; Ex. 2099 ¶ 4). Petitioner asserts further that there was no communication at all between it and Unified concerning any topic related to Patent Owner or the '228 patent except for a general inquiry that it made after the RPI finding in the *Unified* proceeding was made known publicly. *Id.* at 10–11.

Turning to Patent Owner's proffered evidence of communication and coordination, Petitioner asserts that the email Unified sent to Petitioner and all other paying members to notify them that Unified had challenged a patent asserted against it and Apple was a press release as clarified by Mr. Jakel who testified that "such press releases were nothing more than mass emails that were sent to everyone on Unified's email distribution list, including both members and non-members alike." Pet. Mot. Reply 11 (citing PO Mot. Term. 16–17, Ex. 2085, 61:8–23, 163:14–19, 168:11–14, 169:14–21, 171:6–14). Petitioner also asserts that [REDACTED]

[REDACTED]

[REDACTED]

██████████. *Id.* at 11–12 (citing PO Mot. Term. 17; Ex. 2085, 95:8–96:18, 206:4–208, 9; Ex. 2067, 4).

In response to Patent Owner’s contention that “Unified employs a ‘willful blindness’ strategy in intentionally avoiding discussions with its members,” Petitioner asserts that “[f]ar from being part of some nefarious scheme to skirt PTAB rules, Unified’s business model and deterrence strategy were specifically designed ‘to comply with all of the laws,’ including with regard to RPI.” Pet. Mot. Reply 12 (citing Ex. 2085, 188:5–189:9, 212:18–215:23). Petitioner agrees that “Unified’s avoidance of substantive communication with its members was intentional; but [asserts that] it was intentionally done so as to comply with all laws in Unified’s genuine efforts at deterring NPE activity in a truly independent manner.” *Id.* citing Ex. 2085, 188:5–189:9, 194:5–23; 212:18–215:23). Petitioner asserts that “Unified cannot be faulted for intentionally seeking to follow the law and disallowing company control over multiple challenges to a patent. That is, Unified’s following of the law cannot serve as evidence that it is somehow not following the law here.” *Id.* at 12–13.

(3) *Patent Owner’s Reply in Support of its Motion to Terminate*

Patent Owner contends that Petitioner, in its Reply to Patent Owner’s Motion to Terminate, fails to rebut the following material facts: 1) “Unified monitors district court filings and learned of the ’228 patent from MemoryWeb’s complaint against Samsung,” 2) “Unified subsequently challenged the ’228 patent,” 3) “Unified reported the petition filing and institution to members, such as [Petitioner],” 4) “Unified ██████████

██████████ encouraging renewal that ██████████  
 ██████████” and 5) “Membership  
 fees, such as those paid by [Petitioner], ██████████  
 ██████████” PO Mot. Reply 1–2 (citing Ex. 2074, 22–23; PO Mot. Term.,  
 4, 15–17; Ex. 2085, 63:20–64:17).

*(a) Allegation That Patent Owner Benefits from  
 the Unified Proceeding*

Patent Owner maintains its contention that Petitioner benefits from the *Unified* proceeding. PO Mot. Reply 2. Patent Owner contends that Petitioner “does not deny it would benefit from the Unified IPR invalidating claims asserted in district court.” *Id.* (citing PO Mot. Term. 19, 32–33; Pet. Mot. Reply 8–9). Patent Owner contends further that Unified’s practice of challenging fewer than all the claims “demonstrates Unified seeks to allow its members the further benefit of follow-on IPRs challenging every claim” and that “has been too consistent to be anything other than strategic and deliberate.” *Id.* (citing Pet. Mot. Reply 9; PO Mot. Term. 32–33). Thus, according to Patent Owner, “[i]t is not credible to allege that each such example merely relates to Unified’s ‘independent’ invalidity assessment as to some, but not all, claims.” *Id.* at 3.

*(b) Allegation That Petitioner’s Avoidance of  
 Direct Communications is Irrelevant*

Patent Owner contends that even assuming that Petitioner avoids communications with Unified so as to maintain Unified’s independence, this does not negate that this independence primarily benefits its members by circumventing RPI and estoppel rules. PO Mot. Reply 3. Patent Owner asserts that “[t]he Board’s RPI Order [in the *Unified* proceeding]

IPR2022-00222

Patent 10,621,228 B2

acknowledged ‘Unified’s [REDACTED]’ and identified [Petitioner] as an RPI because ‘[t]his creates an obvious advantage for Unified’s members because it allows Unified to act as a proxy’ while ‘insulating Unified’s members from being subjected to’ estoppel.” *Id.* (citing Ex. 2074, 28). According to Patent Owner, Petitioner offers no evidence or argument to rebut this reasoning.

*(c) Allegation That the Unified Proceeding was Filed at Petitioner’s Behest*

Patent Owner contends that Petitioner cannot claim that the *Unified* proceeding was not filed at its behest because Petitioner’s membership agreement [REDACTED] [REDACTED]” PO Mot. Reply 3–4 (citing Pet. Mot. Reply 11; Ex. 2067, 3.1, 3.1(c)). Patent Owner contends further that Petitioner’s argument that it [REDACTED] [REDACTED] [REDACTED] [REDACTED].” *Id.* at 4.

*(d) Allegation that Unified’s Settlement Practices Reinforce its Contention that Petitioner is an RPI in the Unified Proceeding*

Patent Owner contends that “Unified’s [REDACTED] [REDACTED] [REDACTED]” PO Mot. Reply 4 (citing PO Mot. Term. 21–22; Ex. 2085, 226:25–228:8). Patent Owner contends further that

It is undisputed [REDACTED] [REDACTED]



[REDACTED], and directly contradict Samsung’s claim that Unified’s activities are exclusively aimed toward the goal of deterring NPEs for the benefit of the public.

*Id.* at 5–6 (citing Pet. Mot. Reply 10).

In addition, Patent Owner contends that “Unified’s recent decision to stop filing IPRs was made exclusively for the benefit of members and to the detriment of non-members.” PO Mot. Reply 6 (citing PO Mot. Term. 24–25). Patent Owner contends further that “[i]t is impossible to square this decision with Unified’s goal of eliminating NPE patents – the only logical conclusion is that those IPRs were filed for the direct benefit of its members.” *Id.*

*(e) Allegation that Petitioner’s Reliance on  
Prior Board Determinations Misses the Mark*

Patent Owner distinguishes the cases cited by Petitioner and notes that despite Unified’s reliance on a similar narrative in the *Unified* proceeding, “the Board issued the RPI Order based on the unique factual record of these cases.” PO Mot. Reply 6 (citing Ex. 2074, 15–16). Specifically, Patent Owner contends that “[u]nlike the present case, *Bradium* involved a patent that had not been asserted in a lawsuit ‘against any of Petitioner’s members’ so the patent owner relied on Unified’s ‘business model alone’” and that in *CCE* the petitioner “failed to adduce any evidence its member ‘directly financed’ the proceeding initiated by Unified.” *Id.* at 6–7 (citing *Bradium*, 9; Ex. 2074, n.6; *CCE*, Paper 33 at 17; Pet. Mot. Reply 12). Turning to *American Patents*, Patent Owner contends that “it involved a different set of facts, an underlying district court case that had settled, and no related

follow-on IPR.” *Id.* at 7 (citing Pet. Mot. Reply 4, 7; *American Patents*, Paper 115 at 46–47).

(4) *Discussion*

(a) *Unified’s Business Model and the Nature of Unified*

The evidence shows that Unified operates as a membership organization wherein member companies, such as Petitioner, enter into annual “Membership Agreements” with Unified and pay Unified “annual, non-refundable, membership fees” in exchange for Unified’s services. Ex. 2057, 1; Ex. 2058, 1; Ex. 2067, 1, 5.

The evidence also shows that Unified seeks to “[d]eter Non-Practicing Entities (NPEs) who assert bad patents (aka Patent Trolls)” and “protect against frivolous patent litigation.” Ex. 2058, 1. Unified “[m]onitor[s] companies in the protected technology (Micro-Pool) to identify NPE activity.” Ex. 2057, 1. Unified provides “benefits” to its member companies by “work[ing] to reduce NPE activity through monitoring . . . and USPTO challenges.” Ex. 2058, 1. Unified’s operating structure “provides complete alignment between Unified Patents and its member companies.” Ex. 2057, 1.

Unified’s Membership Agreements provide that Unified [REDACTED]

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]. Ex. 2067, 4.

The evidence shows that Unified [REDACTED]  
 [REDACTED]. Ex. 2062, 36:3–13. [REDACTED]  
 [REDACTED]  
 [REDACTED] *Id.* at 74:5–21,  
 75:4–6. Petitioner’s [REDACTED]. *Id.*  
 at 89:5–23. In 2021, Unified had [REDACTED]  
 [REDACTED]. *Id.* at 36:3–13.

Mr. Jakel testified that Unified’s [REDACTED]  
 [REDACTED]. Ex. 2062, 131:23–132:2.  
 According to Patent Owner’s analysis, [REDACTED]  
 [REDACTED]” PO Resp. 23 (citing Ex. 2033, 11–12;  
 Ex. 2062, 131:23–132:2, 133:4–15). Unified’s website indicates that  
 Unified has filed “185 IPR petitions since 2012” and claims a “95% Success  
 Rate in 2020”. Ex. 2059, 1–2. Unified claims to have “filed more patent  
 challenges than all other third-party petitioners combined,” and that it has  
 “successfully neutralized more patents than any other third-party.” *Id.* at 1.

Taken together, this evidence indicates that Unified’s business model,  
 finances, and operations are structured to support Unified’s patent validity  
 challenges, including patent reexamination and the filing of petitions for  
*inter partes* review. These activities act to protect Unified’s members,  
 including Petitioner, from the threat of patent litigation and are important  
 components of Unified’s core subscription business. This is substantial  
 evidence that Unified has a strong financial incentive to serve its members’  
 needs— expressed or not—and those of its other current and potential future  
 clients.

The evidence further shows that Unified’s business model was designed to comply with RPI rules and to maintain its independence from its membership. Ex. 2085, 85:15–87:12. Mr. Jakel testified that “we’ve structured our company to maintain our independence” and that this independence is lost if there is a “real party-in-interest decision [that] finds that companies are real parties-in-interest with us.” *Id.* at 86, 1–2, 7–9. Mr. Jakel testified further that Unified complies “with the real party-in-interest rules and laws . . . because we were intentionally doing that so that we could maintain our independence and run our business . . . It was not done for any other reason than . . . just to maintain our independence so that we could do deterrence in the way we wanted to.” *Id.* at 189:3–9.

The evidence shows that Unified’s business model is focused on deterrence rather than settlement of cases involving NPEs. Ex. 2085, 195:16–197:12. Mr. Jakel testified that even if Petitioner settled the instant proceeding it would continue to prosecute the *Unified* proceeding. *Id.* at 195:16–21. Mr. Jakel testified further that Patent Owner sent “  
 [REDACTED]  
 [REDACTED]  
 [REDACTED]  
 [REDACTED]” *Id.* at 196:21–197:1; *see also id.* at 241:25–242:9.

The evidence shows Unified does engage in deterrence activities besides the filing of *inter partes* reviews. Ex. 2085, 185:24–187:18; Ex. 2057, 1; Ex. 2088, 5. Mr. Jakel testified that what “‘deterrence’ means for Unified [is] that we have the freedom to use a bunch of different tools at our disposal to kind of deter patent owners . . . from buying patents and

asserting patents in the technology space that we are working in.” Ex. 2085, 186:2–6. Mr. Jakel testified further that “[w]e also have what we call PATROLL contests, which we put out contests on patents that we believe are invalid and ask the world to kind of submit prior art on them. Then we publish that prior art to the world.” *Id.* at 186:10–14. Mr. Jakel testified that

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]” *Id.* at 186:15–21.

This evidence leads to the inference that Unified filed the petition in the *Unified* case in accordance with its business model to maintain its independence from its members, including Petitioner, supporting a conclusion that Petitioner is not a RPI in the *Unified* proceeding.

Considering all of the evidence before us in this record, including the testimony and evidence pertaining to Petitioner’s business model that was not before us in the *Unified* proceeding, the evidence indicates that although Unified has a strong financial incentive to serve its members needs by filing actions which may benefit its members, Unified structured its business model to avoid its members being named real parties in interest in Unified’s *inter partes* review proceedings. This evidence leads to the inference that Petitioner is not a RPI in the *Unified* proceeding.

*(b) Unified’s Interest in the Unified Proceeding*

The evidence shows that for the technology sectors of its zones Unified is [REDACTED]

Ex. 2067, 4.

The evidence shows that Unified was aware that Patent Owner had sued Petitioner for infringement of the '228 patent in district court at the time that it filed the *Unified* proceeding. Ex. 2077, 28. The evidence further shows that Unified has no risk of liability for infringement of the '228 patent in that Unified does not practice the invention covered by this patent. *See e.g.* Ex. 2060 (“Unified is a deterrence entity that seeks to deter the assertion of poor quality patents . . . Unified is not a law firm, and does not have an attorney-client relationship with members. Unified’s activities are not based on the interests of any particular member or members.”); *see also* Ex. 2057.

These facts are similar to the facts in *AIT II* which leads to the inference that Petitioner is an RPI in the *Unified Proceeding*. *AIT II*, Paper 128, 16–17).

*(c) Extent to Which Unified Took Petitioner’s Interest into Account in Filing the Unified Proceeding*

The evidence shows that Unified advertises that its business model “provides complete alignment between Unified Patents and its member companies.” Ex. 2057. 1. Mr. Jakel testified that “what Unified is talking about is the fact that we are not going to pay NPEs to try and buy licenses and incentivize more litigation.” Ex. 2085, 198:1–3. Mr. Jakel testified further that

It does not refer and it never was meant to refer to the kind of complete alignment that has been . . . referred to . . . in PTAB

board decisions related to [AIT] and other[] [cases] where complete alignment is referring to their representation, [in] an in-house [counsel] kind of work where [the company in question has] an attorney-client privilege relationship with [their members] and they are attempting to kind of settle out litigation, specifically on behalf of their . . . members.

*Id.* at 198:8–17. The evidence also shows that Unified learned about the ’228 patent from a litigation reporting service when it was asserted for the first time. *Id.* at 64:4–6.

The evidence shows, as discussed in further detail in Section II.B.5.h below, that at the time of the filing of the *Unified* proceeding, Petitioner’s

[REDACTED]  
[REDACTED]. Ex. 2077, 19; Ex. 2085, 29:21–24. The evidence further shows that [REDACTED]  
[REDACTED] such as the filing of *inter partes* review proceedings. Ex. 2077, 19.

The evidence further shows that in 2021, Unified filed 220 *inter partes* reviews of which [REDACTED]

[REDACTED]. Ex. 2077, 10, 21–22. Of the [REDACTED]  
[REDACTED].

*Id.* at 26–28. Regarding these challenges and in response to questions as to whether Unified wants to keep its members happy, Mr. Jakel testified that “what we want to do is deliver deterrence for the zone. We think we do that. And we think our members . . . appreciate the work we do for the zone for the technology area. And . . . that’s what they participate for.”

Ex. 2085, 87:19–88:4. Mr. Jake testified further that “we do deterrence and if our members appreciate the deterrence, they get to choose whether or not

they participate” and that “when it comes to doing something on behalf of a technology area . . . we work on behalf of a zone, honestly, we don’t know if in any single action we take or even in all of them, if members are happy.” *Id.* at 88:10–13, 88:19–25. In addition, Mr. Jakel testified that Petitioner is one of the most highly litigated companies in the world, so it is going to show up in lots of NPE activity and that its purely coincidence that Unified chose to “go after” a patent asserted against Petitioner. *See id.* at 185:1–7.

This evidence supports the inference that Unified takes its membership’s interest in the deterrence of NPE activity into account when filing for *inter partes* review. It further supports the inference that Unified took Petitioner’s interest into account when it decided to file its challenge to the ’228 patent. If Unified’s decisions as to which patents to challenge were

[REDACTED]  
[REDACTED]  
[REDACTED]. Considering all of the evidence regarding the extent to which Unified took Petitioner’s interest into account in filing the *Unified* proceeding, the evidence leads to the inference that Petitioner is not a RPI in the *Unified* proceeding.

*(d) Petitioners Relationship, Including  
Communications and Coordination, With Unified*

The evidence shows that Petitioner is a dues-paying member of Unified and has been since November 1, 2015. Ex. 2067, 1. The evidence further shows that Petitioner belongs to Unified’s [REDACTED]  
[REDACTED]. Ex. 2067, 14–15.



The evidence shows that Unified sends its members annual membership reports. *See e.g.* Ex. 2085, 92:2–6. Exhibit 2077 is the [REDACTED]. Mr. Jakel testified that “[REDACTED] [REDACTED] [REDACTED].” Ex. 2085, 96:5–9. Mr. Jakel testified further that “[REDACTED] [REDACTED] [REDACTED] [REDACTED]” *Id.* at 9–12.

The evidence further shows that Unified periodically sends Petitioner emails. *See e.g.* Exhibits 2010, 2055, 2068. Exhibit 2068<sup>20</sup> is an example of such an email. Mr. Jakel testified that Ex. 2068 is a press release and that Exhibit 2069 is an [REDACTED]. Ex. 2085, 58:10–12, 60:17–61:3. [REDACTED] [REDACTED] [REDACTED]

In addition, the evidence shows that Petitioner did not communicate or coordinate with Unified regarding the instant proceeding or the *Unified* proceeding. Mr. Koo testified that “[a]side from general newsletters that Unified sends out periodically as mass email, Samsung has never had any communications with Unified about the Unified IPR or the Samsung IPR, or

<sup>20</sup> In the September 2023 Deposition of Kevin Jakel (Ex. 2085) Exhibit 2068 is also referred to as Exhibit 2074 (its exhibit number in the *Apple* proceeding). Similarly, Ex. 2069 is referred to in Mr. Jakel’s testimony by its exhibit number in the *Apple* proceeding (Ex. 2075).

about the '228 Patent described in those petitions, [REDACTED]  
[REDACTED].” Ex. 2099 ¶ 4. Specifically, Mr. Koo testified that Petitioner “did not ask for or receive any input from Unified in preparing or filing” this proceeding, that Petitioner “did not give any input to Unified concerning its decision to challenge the '228 Patent,” and that Petitioner “did not give any input to Unified in its preparation of the Unified IPR.” *Id.*

Considering all of the evidence before us in this record, including the lack of evidence of direct communication or coordination between Petitioner and Unified, the evidence indicates that there was no relationship between Petitioner and Unified that would give rise to the implication that Petitioner is a RPI in the *Unified* proceeding. Rather, this evidence leads to the inference that Petitioner is not a RPI in the *Unified* proceeding.

*(e) Petitioner’s Interest in and Potential Benefit  
From the Unified Proceeding and Whether  
Unified Represents That Interest, as Well as,  
Petitioner’s Desire for Review of the '228 Patent*

The evidence shows that Petitioner has an interest in the *Unified* Proceeding and desired review of the '228 patent by virtue of the fact that Petitioner filed the instant proceeding to challenge the '228 patent and that this same patent is at issue in the *Unified* proceeding.

The evidence further shows that Petitioner would benefit from the cancellation of claims 1–7 of the '228 patent in the *Unified* proceeding, by virtue of the fact that it will no longer have to pursue those claims in district court.

The evidence also shows that even if claims 1–7 are cancelled in the *Unified* proceeding, Petitioner will still have to defend itself against claims 8–19 of the '228 patent.

This evidence demonstrates that Petitioner will benefit should Unified prevail in the *Unified* proceeding, but that Unified has not represented all of Petitioner's interest by not challenging all of the claims of the '228 patent. Accordingly, this evidence does not lead to the inference that Petitioner is a RPI in the *Unified* proceeding.

*(f) Whether Petitioner Funded, Directed, Influenced or Exercised Control Over the Unified Proceeding*

The evidence shows that as of 2021, Petitioner paid [REDACTED] [REDACTED] for membership [REDACTED]. *See e.g.* Ex. 2077, p. 19. The evidence further shows that Unified had [REDACTED] [REDACTED] *Id.* The evidence shows that the [REDACTED] [REDACTED] [REDACTED]. *Id.* In addition, the evidence shows that in 2021, Unified's total revenue was [REDACTED]. Ex. 2085, 29:21–30:24. Thus, [REDACTED] [REDACTED]. This evidence does not show that Petitioner directly funded the *Unified* proceeding.

As discussed in Section II.B.5.d above, the evidence shows that Petitioner did not communicate or coordinate with Unified with regards to the *Unified* proceeding “ [REDACTED] ” Ex. 2099 ¶ 4.

Given the absence of evidence of communication or control, the evidence does not show that Petitioner directed or influenced Unified’s actions in the *Unified* proceeding either.

This evidence does not support the inference that Petitioner is a RPI in the *Unified* proceeding.

*(g) Conclusion re Real Party in Interest*

Having considered all of the evidence of record and the parties’ arguments, we find that the evidence that Petitioner is not a RPI to the *Unified* proceeding outweighs the evidence that it is.

*C. Estoppel*

As we have determined that Petitioner is not an RPI in the *Unified* proceeding, the estoppel provisions of 35 U.S.C. § 315(e)(1) do not apply to this proceeding.

*D. Motion to Terminate*

Patent Owner has moved to terminate this proceeding pursuant to 35 U.S.C. § 315(e)(1), 37 C.F.R. § 42.73(d), and 35 U.S.C. § 315(d). Paper 52, 1. Patent Owner’s motion to terminate these proceedings is denied given our determination that Petitioner is not an RPI in the *Unified* proceeding. However, even we had determined that Petitioner is an RPI in the *Unified* proceeding and that Petitioner is estopped as to claims 1–7, we would not terminate this proceeding as to those claims, nor would we terminate the

proceeding as to the remaining claims, because it is in the interest of the public as well as the integrity of the patent system that the panel issue a final written decision on the merits of this case. *See, e.g., Intuitive Surgical, Inc v. Ethicon LLC*, IPR2018-01248, Paper 34, 18.

E. *Principles of Law: Obviousness*

A claim is unpatentable as obvious under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations.<sup>21</sup> *See Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

The Supreme Court has made clear that we apply “an expansive and flexible approach” to the question of obviousness. *KSR*, 550 U.S. at 415. Whether a patent claiming the combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 417. Reaching this conclusion, however, requires more than a mere showing that the prior art includes separate references covering each

<sup>21</sup> The record does not present or address any evidence of nonobviousness.

separate limitation in a claim under examination. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness requires the additional showing that a person of ordinary skill would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. *Id.*

#### F. *Level of Ordinary Skill in the Art*

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17. “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991).

In determining the level of skill in the art, we consider the type of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom Accessories, Inc. v. Jeffrey-Allan Indus. Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986); *Orthopedic Equip. Co. v. U.S.*, 702 F.2d 1005, 1011 (Fed. Cir. 1983).

Petitioner contends that a person of ordinary skill in the art at the time of the invention of the ’228 patent would have had the following education and experience:

- (1) a bachelor’s degree in computer science, computer engineering, electrical engineering, or a related field, and (2) at least one year of experience designing graphical user interfaces for applications such as photo organization systems.
- [ ] Additional graduate education could substitute for professional

experience, or significant experience in the field could substitute for formal education.

Pet. 2 (citing Ex. 1003 ¶ 27). Patent Owner does not challenge this definition of the level of skill. PO Resp. 10.

Based on the record, including our review of the '228 patent and the types of problems and solutions described in the patent and the cited prior art, we adopt Petitioner's assessment of the level of ordinary skill in the art and apply it for purposes of this Decision.

#### G. *Claim Construction*

Pursuant to 37 C.F.R. § 42.100(b), we apply the claim construction standard as set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Under *Phillips*, claim terms are generally given their ordinary and customary meaning as would be understood by one with ordinary skill in the art in the context of the specification, the prosecution history, other claims, and even extrinsic evidence including expert and inventor testimony, dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Id.* at 1312–17. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (in the context of an *inter partes* review, applying *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner asserts that “no formal claim constructions are necessary in this proceeding.” Pet. 1–2 (citing *Wellman, Inc. v. Eastman Chem. Co.*, 642

F.3d 1355, 1361 (Fed. Cir. 2011) (footnote omitted). Patent Owner states that it “does not believe claim construction is required,” then goes on to proffer definitions of portions of limitations [1g], [1i], 1[k]<sup>22</sup> and claim 18. PO Resp. 11–19. We discuss these limitations below.

1. *Limitations [1g] and [1i]: “Responsive to a Second Input . . . Causing a People View to be Displayed . . . the People View Including . . . a First Name”*

Claim 1 recites “responsive to a second input that is subsequent to the first input, causing a people view to be displayed on the interface, the people view including” (limitation [1g]) and “(ii) a first name associated with the first person, the first name being displayed adjacent to the first person selectable thumbnail image” (limitation [1i]). Ex. 1001, 35:61–36:3.

a) *Patent Owner’s Response*

Patent Owner contends that “[t]he plain and ordinary meaning of limitations [1g] and [1i] require that the ‘people view’ displayed in response to the ‘second input’ must ‘includ[e]’ a ‘first name.’” PO Resp. 11 (citing Ex. 2023 ¶¶ 67–70). Patent Owner asserts that in his deposition Dr. Greenspun agreed that this definition means that “a user does something maybe with a mouse or a finger gesture on a touch screen and that subsequent to that you know the software within the application displays the people view.” *Id.* at 11; Ex. 2022, 43:23–44:3. Patent Owner asserts further that Dr. Greenspun acknowledged that “nothing in the ‘228 [patent’s] specification contemplates requiring any user input beyond the ‘second input’ to cause the display of the ‘people view’ and ‘first name’ caption.”

<sup>22</sup> As labeled by Patent Owner in its Response.



PO Resp. 12 (citing Ex. 2022, 49:9–50:15; *Am. Calcar, Inc. v. Am. Honda Motor Co.*, 651 F.3d 1318, 1340 (Fed. Cir. 2011)).

Patent Owner contends further that “courts construe the phrase ‘responsive to’ as imparting a ‘cause-and-effect’ relationship, whereby a second event occurs ‘automatically’ in relation to a first event without ‘requiring further user interaction.’” *Id.* at 11–12 (citing *Am. Calcar*, 651 F.3d at 1340; *Fujitsu Ltd. v. Belkin Int’l, Inc.*, 2012 U.S. Dist. LEXIS 142102, at \*88 (N.D. Cal. Sep. 28, 2012); *Microsoft Corp. v. FG SRC, LLC*, 860 F. App’x 708, 714 (Fed. Cir. 2021)).

In addition, Patent Owner contends that “the ’228 patent discloses an exemplary embodiment consistent with the express words recited in the claim. In particular, the specification states that ‘selecting “People” (1401)’ (*second input*) causes the People Application View of FIG 32 (*people view*) to be displayed.” PO Resp. 13 (citing Ex. 1001 Fig. 32, 22:59–23:42; Ex. 2023 ¶¶ 68–70). Patent Owner contends further that “[t]he specification discloses that the People Application View of FIG 32 displayed in response to selecting ““People’ 1401 (*second input*) includes the text ‘Jon Smith’ (*first name*) and does not disclose that any further ‘user interaction’ is needed.” *Id.* (citing *Am. Calcar*, 651 F.3d at 1340).

*b) Petitioner’s Reply*

Petitioner replies that Patent Owner’s claim construction is overly narrow. Pet. Reply 2. Petitioner replies further that “as Dr. Greenspun explained during his deposition, a POSITA<sup>23</sup> would have recognized that the

<sup>23</sup> Person of ordinary skill in the art.

term ‘responsive to’ merely requires the second event to happen ‘subsequent to’ the first event based on a combination of user interaction and software implementation.” *Id.* at 3 (citing Ex. 2002, 42:21–44:22, 51:9–52:13; Ex. 1041, 3–8).

Turning to the embodiment discussed by Patent Owner, Petitioner replies that “the people view that is ultimately shown to the user entails not only the initial pressing of ‘People’ (1401) . . . but further the additional selection of a desired display order via a drop-down list (1402).” Pet. Reply 3 (citing Ex. 1001, Fig. 32, 33:59–67; Ex. 1041, 5). In other words, according to Petitioner, “even the ’228 patent itself contemplates having intermediate user actions between the first event (*i.e.*, ‘cause’) and the second event (*i.e.*, ‘effect’).” *Id.* (citing Ex. 1041, 6).

*c) Patent Owner’s Sur-reply*

After reiterating its arguments from its Response, Patent Owner contends that Petitioner’s arguments are erroneous and irrelevant. PO Sur-reply. 1–4. Specifically, Patent Owner contends that “Petitioner mischaracterizes the specification[’s]” description of Figure 32. *Id.* at 4–5. According to Patent Owner, the fact that the specification of the ’228 patent “discloses optionally ‘adjust[ing]’ the people view’s display settings **after** its initial display is irrelevant to the meaning of ‘responsive to.’” *Id.* at 5.

*d) Discussion*

The plain language of claim 1 does not require display of a first name associated with a first person responsive to a second input. Rather, claim 1 requires “responsive to a second input” display of a people view. Ex. 1001, 35:61–63. Claim 1 further requires that the people view *include* a first name

associated with a first person. *Id.* at 35:63, 36:1–3. Claim 1, however, does not require that the first name be displayed “responsive to” the second input.

Even if we were to accept Patent Owner’s narrow definition of “responsive to” as requiring a cause-and-effect relationship (which we do not), claim 1 would not require display of a first name associated with a first person. Although Patent Owner is correct that nothing in the specification of the ’228 patent requires any user input beyond the second input to display the first name, nothing in the specification precludes it either.

Patent Owner’s definition of this limitation is based on an exemplary embodiment disclosed in the ’228 patent. PO Resp. 13. The claims however, are not limited to this embodiment. *See, e.g., WesternGeco LLC v. ION Geophysical Corp.*, 889 F.3d 1308, 1323–24 (Fed. Cir. 2018) (“It is well established that claims are not limited to preferred embodiments, unless the specification clearly indicates otherwise.”).

For these reasons, we determine that limitations [1g] and [1i] do not require display of a first name associated with the first person when the second input is executed.

2. *Limitations [1g], [1i], and [1k]: “The People View Including . . . a First Name . . . [and] a Second Name.”*

Claim 1 recites “responsive to a second input that is subsequent to the first input, causing a people view to be displayed on the interface, the people view including” (limitation [1g]), “(ii) a first name associated with the first person, the first name being displayed adjacent to the first person selectable thumbnail image” (limitation [1i]), and “a second name associated with the

second person, the second name being displayed adjacent to the second person selectable thumbnail image.” Ex. 1001, 35:61–36:11.

Patent Owner contends that “[t]he plain and ordinary meaning of limitations [1g], [1i] and [1k] require that the ‘people view’ must ‘includ[e]’ both a ‘first name’ *and* a ‘second name’ displayed in the same view. PO Resp. 14. Patent Owner’s arguments for this claim construction are similar to its arguments discussed in the preceding Section in that they are premised on the assumption that claim 1 requires displaying of features of the people view responsive to the second input. *See* PO Resp. 14–17; *see also* PO Sur-reply 9–15. As discussed above, however, claim 1 does not specify display of features of the people view. Rather, it merely specifies what the features of the people view must include. Ex. 1001, 35:61–36:11. We recognize that “understanding the claim language may be aided by the explanations contained in the written description,” but “it is important not to import into a claim limitations that are not a part of the claim.” *SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004). Thus, “a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.” *Id.*

For these reasons, we determine that limitations [1g], [1i], and [1k] do not require that the first name and second name be displayed in the same view.

3. *Claim 18: “First Person View . . . Including a Representation of Each Digital File in the Third Set of Digital Files”*

Claim 18 recites

The method of claim 1, further comprising responsive to an input that is indicative of a selection of the first person

selectable thumbnail image, causing a first person view to be displayed on the interface, the first person view including (i) the first name and (ii) a representation of each digital file in the third set of digital files.

Ex. 1001, 38:8–13. Limitation [1h] recites “(i) a first person selectable thumbnail image including a representation of a face of a first person, the first person being associated with a third set of digital files including digital photographs and videos.” *Id.* at 35:64–67.

Patent Owner contends that [t]he plain and ordinary meaning of claim 18 requires (i) receiving an ‘input’ from the ‘people view’ of limitation [1h]; and (ii) in response to that input, displaying a ‘first person view’ that ‘includ[es] . . . a representation of each digital file in the third set of digital files.’” PO Resp. 17–18 (citing Ex. 2023 ¶¶ 80–85). Patent Owner’s arguments for this claim construction are similar to its arguments discussed in Section II.G.1. above, in that they are premised on the assumption that claim 1 requires displaying of all of the features of the people view responsive to the display of the first person view. *See* PO Resp. 17–19; *see also* PO Sur-reply 15–16. Claim 18, however, does not specify displaying the first name and a representation of each digital file in the third set of digital files when the first person view is displayed. Rather, it specifies what the features of the people view must include. Ex. 1001, 38:8–13.

Thus, for reasons similar to those discussed in Section II.G.1.d above, we determine that claim 18 does not require display of a representation of each digital file in the third set of digital files when the first person view is displayed.

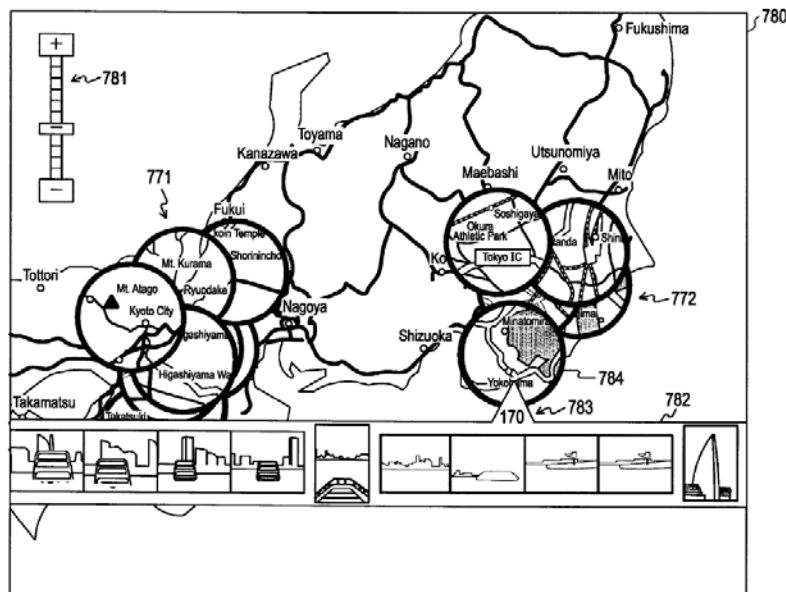
## H. Overview of the Asserted Prior art

### 1. Okamura

Okamura is a U.S. Patent Publication titled, “Information Processing Apparatus, Information Processing Method, and Program,” published May 26, 2011. Ex. 1005, codes (45), (54). Okamura describes an information processing apparatus which displays contents such as image files. Ex. 1005 ¶ 2. Okamura’s information processing apparatus also allows managing of contents such as recorded image files. *Id.* ¶ 91.

Figure 41, reproduced below, shows an embodiment of a display of Okamura that includes a map view screen.

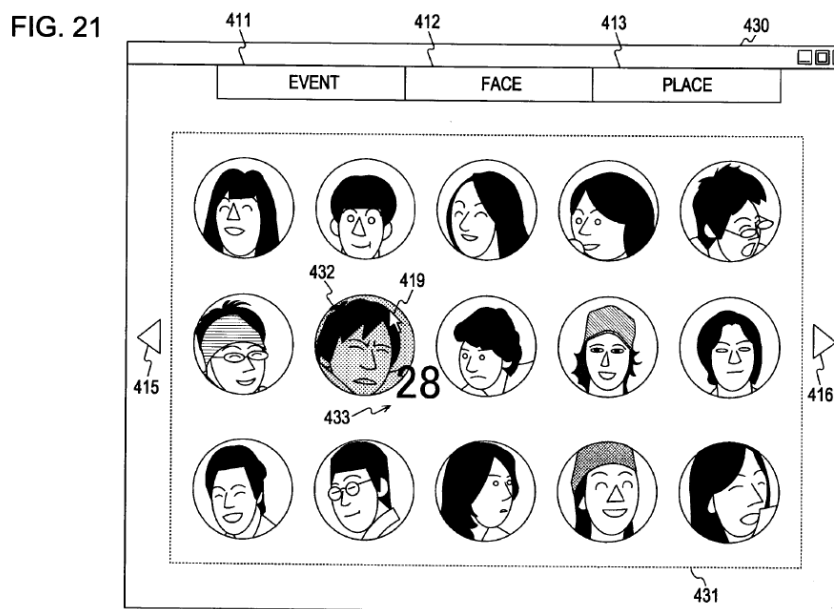
FIG. 41



*Id.* Fig. 41, ¶ 61. As shown in Figure 41, map view screen 780 displays a map including cluster map groups 771, 772. *Id.* A user can change the scale of map view screen 780 and can select a desired cluster map such that a listing of its contents is displayed in content listing display area 782. *Id.* Fig. 41, ¶¶ 355–56. For example, cluster map 784 within cluster map group 772

is selected to show it has contents that can be displayed in content listing display area 782. *Id.* Fig. 41, ¶ 356. Overlapping cluster maps are spread out in accordance with a predetermined condition such that “graphical correspondence between contents may be intuitively grasped.” *Id.* Fig. 41, ¶ 358.

Figure 21, reproduced below, shows another embodiment of a display of Okamura that includes an index screen.

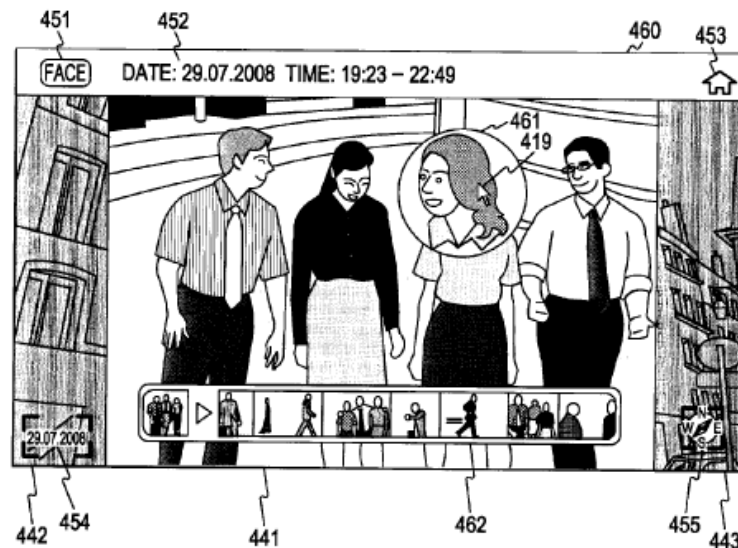


*Id.* Fig. 21, ¶ 41. As shown in Figure 21, an index screen displays indexed images generated on the basis of face information. *Id.* Fig. 21, ¶ 234. The index screen includes cursor 419 for pointing to an object of instruction or operation on the screen. *Id.* Fig. 21, ¶ 234. The index screen includes “EVENT” tab 411, “FACE” tab 412, and “PLACE” tab 413 that are used for displaying a different index screen. *Id.* Fig. 21, ¶¶ 235–36. Okamura discloses that in the face cluster image display area 431 shown in Figure 21, images representing face clusters are displayed such that “an image

representing a face cluster, for example, a thumbnail image of each of faces included in contents belonging to the face cluster can be used” by extracting faces and contents belonging to the face cluster. *Id.* Fig. 21, ¶ 246. For example, thumbnail image 432 in face cluster image display area 431 has 28 contents indicated for its pieces of information 433, that can be accessed by a user. *Id.* Fig. 21, ¶ 247.

Figure 24, reproduced below, shows another embodiment of a display of Okamura that includes a content playback screen.

FIG. 24



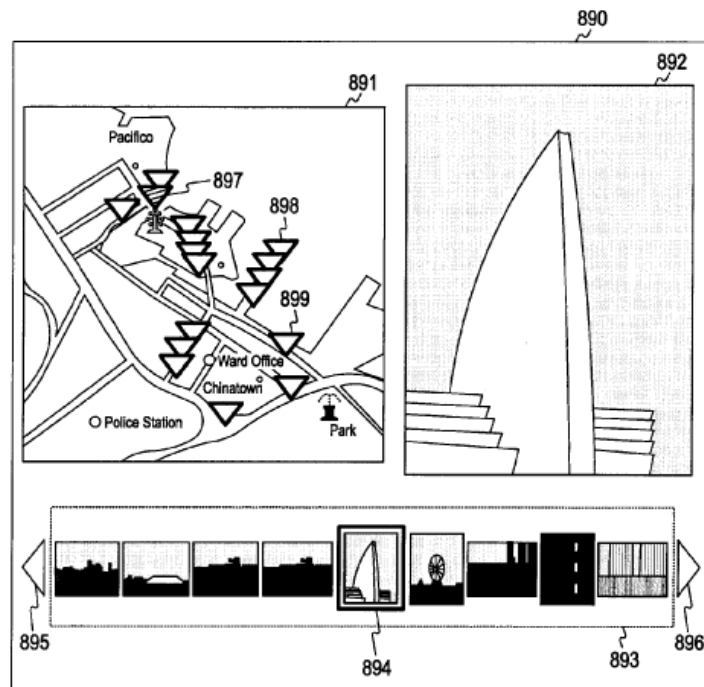
*Id.* Fig. 24, ¶ 44. As shown in Figure 24, content playback screen 460 can be displayed “when the mouse is placed over the face portion” in another content playback screen. *Id.* Fig. 24, ¶ 261. Content playback screen 460 includes image 461 of the vicinity of the face displayed in magnified form and content listing display area 462 in content display area 411. *Id.* Fig. 24, ¶ 261. Content listing display area 462 shows a listing of contents included



in the face cluster (from Figure 21 for example) and also thumbnail images of the content. *Id.* Fig. 24, ¶ 261.

Figure 50, reproduced below, shows another embodiment of a display of Okamura that includes a play view screen.

FIG. 50



*Id.* Fig. 50, ¶ 70. As shown in Figure 50, play view screen 890 shows “images related to a cluster corresponding to the cluster map on which a determining operation has been made are displayed,” including “a listing of contents belonging to the cluster, a content’s magnified image, and the like.”

*Id.* Fig. 50, ¶ 440. Play view screen 890 includes map display area 891, magnified image display area 892, and content listing display area 893. *Id.*

Fig. 50, ¶ 441. Map display area 891 includes a map related to the corresponding cluster with marks indicating the generated positions of

contents belonging to the corresponding cluster. *Id.* Fig. 50, ¶ 442. Content listing display area 893 shows a listing of contents belonging to the corresponding cluster which are displayed as thumbnails. *Id.* Fig. 50, ¶ 444. Magnified image display area 892 includes an image corresponding to the content selected from box 894 of the content listing display area 893, which is displayed in magnified form. *Id.* Fig. 50, ¶ 443.

## 2. *Belitz*

*Belitz* is a U.S. Patent Publication titled, “User Interface, Device and Method for Displaying Special Locations on a Map,” published March 4, 2010. Ex. 1006, codes (45), (54). *Belitz* describes clustered locations on a map for a user to overview associated images to special locations so that the user can “clearly see the associations.” Ex. 1006 ¶¶ 1, 4.

*Belitz* relates to a “user interface . . . configured to display a map and to display at least one marked location on said map.” Ex. 1006, code (57). By way of background, *Belitz* explains that “[i]t is common to mark special locations on a map by associating a graphical object with that location. Examples of such locations are service points, restaurants, tourist attractions, visited places etc[.] and examples of graphical objects are photographs taken at such a location.” *Id.* ¶ 2. *Belitz* further explains “[i]f many locations are located close to one another they overlap and the view of the associated images become cluttered and it is difficult to discern between the various objects and the user is not provided with a good view of what location is associated with what.” *Id.* *Belitz* presents a user interface attempting to address those concerns. *Id.* ¶ 5. Figures 4a and 4b, reproduced below, show screenshots of the user interface. *Id.* ¶¶ 51, 55.

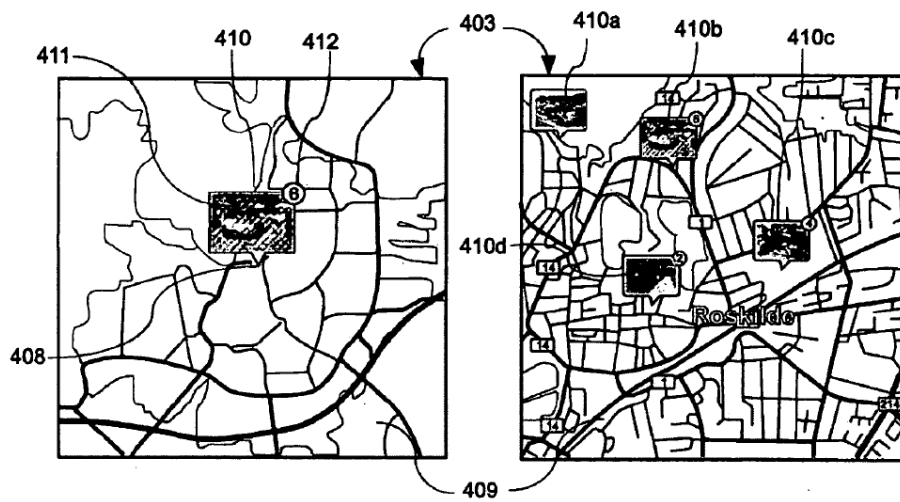


Fig. 4a

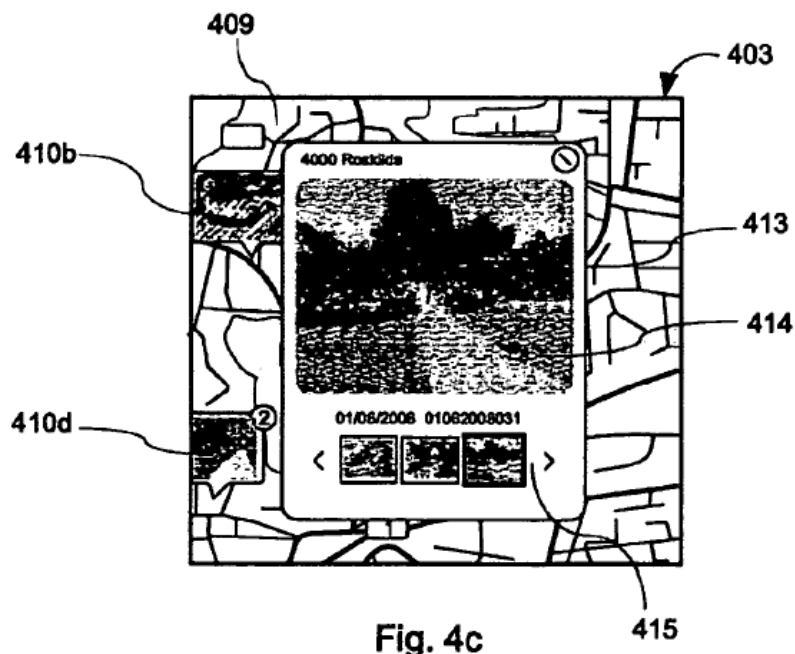
Fig. 4b

As shown in Figure 4a, a “map 409 is displayed of a town called Roskilde. A location 408 is marked by a graphical object 410.” *Id.* ¶ 51. “[G]raphical object 410 has a visual representation 411 which in this embodiment is a photograph that is associated with the location.” *Id.* ¶ 52. Furthermore, “graphical object 410 carries a number indicator 412 which presents a viewer with a number. The number indicates how many graphical objects 410 are associated with that location and are stacked into one graphical object 410.” *Id.* ¶ 54. Furthermore, “graphical objects stacked in the displayed graphical object or graphical group object 410 . . . can be associated with other locations that are in close proximity to the marked location 408” because “if the graphical objects associated with each location were to be displayed separately they would overlap which would clutter the view and be confusing to a user.” *Id.*

Figure 4b shows map 408 having been “zoomed in showing the area in greater detail.” *Id.* ¶ 55. At this zoom level, graphical object 410 is “split up into 4 graphical objects 410a, 410b, 410c and 410d” because the display

of those graphical objects would not overlap. *Id.* Those graphical objects themselves also consist of some number of graphical objects. *Id.*

When a graphical object, e.g., graphical object 410, 410a, 410b, 410c, or 410d, is selected, a popup window is displayed over the graphical object. *Id.* ¶ 60. Figure 4c, reproduced below, is a screenshot showing the user interface after the selection of graphical object 410c. *Id.*



**Fig. 4c**

As shown in Figure 4c, the “popup window shows at least some of the visual representations 411 of the graphical object 410c.” Ex. 1006 ¶ 60. “One 414 of the visual representations 411 or images as they are in this embodiment is shown in a larger size than the others which are shown in a list 415.” *Id.* In some embodiments, “graphical objects are photographs that are associated with the location where they were taken. The visual representations are thumbnails of the photographs.” *Id.* ¶ 62.

I. *Obviousness under 35 U.S.C. § 103*

Petitioner contends that claims 1–19 are unpatentable over combination of Okamura and Belitz. Pet. 7–81. Patent Owner disputes Petitioner’s contentions. Prelim. Resp. 46–66.

1. *Independent Claim 1*

For each limitation of claim 1, Petitioner asserts that Okamura alone or in combination with Belitz meets that limitation. Pet. 26–55. Petitioner also provides the testimony of Dr. Greenspun, in support of its position with respect to the limitations of claim 1. *See* Ex. 1003 ¶¶ 102–145. Patent Owner does not contest Petitioner’s findings for every limitation. For the uncontested limitations, we have considered Petitioner’s evidence and arguments with respect to these limitations, including the relevant testimony of Dr. Greenspun and find it to be sufficient to show, by a preponderance of the evidence, that Okamura, either alone or in combination with Belitz, discloses them. Accordingly, we focus our discussion on the contested limitations and Patent Owner’s argument that Petitioner has not carried its burden on obviousness. PO Resp. 19.

*a) Limitations [1g] and [1i]: “Responsive to a Second Input . . . Causing a People View to be Displayed . . . the People View Including . . . a First Name”*

Petitioner asserts that “Okamura discloses displaying a people view (‘index images generated on the basis of face information’) in response to a **user operation** (‘when the ‘FACE’ tab 412 is depressed using the cursor 419’).” Pet. 46 (citing Ex. 1005 ¶¶ 234, 236; Fig. 21; Ex. 1003 ¶ 133). Petitioner asserts that Okamura’s “people view” includes “multiple person selectable thumbnail images.” *Id.* at 53 (citing Ex. 1005 ¶¶ 234, 246–260,

267, Fig. 21; Ex. 1003 ¶ 144). Petitioner asserts that any one of these thumbnail images corresponds to the claimed first person selectable thumbnail image and that “any one of the person selectable thumbnail images (e.g., as annotated below) displayed on the index screen is a second person selectable thumbnail image, as long as it is different from a first person selectable thumbnail image.” *Id.* (citing Ex. 1005 ¶¶ 234, 246–250, Fig. 21; Ex. 1003 ¶ 144).

Petitioner asserts that for each of Okamura’s thumbnail images ““when the mouse is placed over a thumbnail image 432 by a user operation on the index screen 430 shown in FIG. 21, the color of the thumbnail image 432 changes, and pieces of information 433 related to the thumbnail image 432 are displayed.”” Pet. 52 (citing Ex. 1005 ¶ 247). Petitioner asserts further that the pieces of information displayed include the name of the person displayed adjacent to the thumbnail image. *Id.*

Patent Owner contends that “Okamura does not disclose all aspects of the claimed ‘people view’” and “Petitioner has not shown that it would have been obvious to modify Okamura with Belitz in any of the ways suggested in the Petition.” PO Resp. 19–20 (citing Ex. 2023 ¶¶ 86–200). Specifically, Patent Owner contends that claim 1 requires that the claimed people view displayed in response to the second input must include a first name and Okamura does not teach this. *Id.* at 20–21. Patent Owner asserts that [t]his [alleged] deficiency is dispositive of Ground 1” because “[t]he Petition does not offer any obviousness modification, or evidence to support an obviousness modification, for the Board to consider relating to displaying the people view ‘responsive to [the] second input.’” *Id.* at 22.

Patent Owner's arguments are premised on our adoption of its construction of limitations [1g] and [1i]. As we have not adopted Patent Owner's construction of these limitations, Patent Owner's arguments are unavailing.

On the complete record before us, we determine that Petitioner has shown, by a preponderance of the evidence, that Okamura discloses limitations [1g] and [1i].

*b) Limitations [1g], [1i], and [1k]: “The People View Including . . . a First Name . . . [and] a Second Name.”*

Petitioner's assertions for limitations [1g] and [1i] are summarized in the prior Section. For limitation [1k], Petitioner asserts that “any one of the person selectable thumbnail images . . . displayed on [Okamura's] index screen is a second person selectable thumbnail image, as long as it is different from a first person selectable thumbnail image.” Pet. 54–55 (citing Ex. 1005 ¶¶ 234, 246–250, Fig. 211 Ex. 1003 ¶145).

Patent Owner contends that claim requires that displaying of the people view in response to the second input must include the display of a first name and second name at the same time and that Okamura does not disclose this. PO Resp. 25–27. Patent Owner asserts that “[t]his deficiency is also dispositive of Ground 1” because “[t]he Petition does not offer any obviousness modification, or evidence to support an obviousness modification, for the Board to consider relating to including both a ‘first name’ and ‘second name’ in the claimed people view.” *Id.* at 27 (citing *Intelligent Bio-Sys.*, 821 F.3d at 1369; *Qualcomm Inc.*, 24 F.4th at 1377; *Koninklijke Philips N.V.*, 948 F.3d at 1336).

Patent Owner's arguments are premised on our adoption of its construction of limitations [1g], [1i], and [1k]. As we have not adopted Patent Owner's construction of these limitations, Patent Owner's arguments are unavailing.

On the complete record before us, we determine that Petitioner has shown, by a preponderance of the evidence, that Okamura discloses limitations [1g], [1i], and [1k].

*c) Limitations [1c] and [1d]: “a [First/Second] Location Selectable Thumbnail Image at a [First/Second] Location on the Interactive Map*

For limitation [1c] Petitioner asserts that “[w]hile Okamura's clusters are not thumbnails of images within the clusters, Belitz discloses displaying location selectable thumbnail images (e.g., thumbnails 410a–d) at different locations of an interactive map as shown in FIGS. 4a and 4b.” Pet. 32.

Petitioner asserts further that “Belitz discloses a thumbnail image that is associated with the location: ‘The **graphical object 410** has a visual representation 411 which in this embodiment is a photograph that is **associated with the location** . . . Examples of associations are photographs that have been taken at those coordinates.’” *Id.* at 33 (citing Ex. 1006 ¶52; Ex. 1003 ¶¶113–114). In addition, Petitioner asserts that “Belitz describes its thumbnail image as being location selectable: “. . . a graphical object 410c has been **selected by a user**, possibly by tapping on it with a stylus if the display 403 is a touch screen or by placing a cursor above it and clicking it.”” *Id.* (citing Ex. 1006 ¶ 60).

For limitation [1d], Petitioner refers to its discussion of limitation [1c]. Pet. 36. Petitioner further asserts that “because Belitz's thumbnails are



displayed at different locations on the interactive map, any one of Belitz’s selectable thumbnail images 410a–d displayed on the interactive map . . . is a second location selectable thumbnail image (e.g., 410b), as long as it is different from a first location selectable thumbnail image (e.g., 410c).” *Id.* at 37 (citing Ex. 1006, Fig 4d; Ex. 1003 ¶ 121).

(1) *First Combination of Okamura and Belitz*

(a) *Petitioner’s Assertions*

Petitioner asserts that a person of ordinary skill in the art “would have found it obvious to replace the location-based clusters used in Okamura’s map view (shown in FIG. 41) with the thumbnail images used in Belitz’s map view.” Pet. 12 (citing Ex. 1003 ¶ 87). According to Petitioner, “[w]ith this replacement, Okamura’s map view would function as described in Okamura, except that it would display, on the map view, thumbnail images as described by Belitz, instead of Okamura’s location-based clusters.” *Id.* In addition, Petitioner contends that Okamura’s location-based clusters are thumbnails as claimed. *Id.* at 13.

Petitioner asserts that Okamura and Belitz “describe analogous methods of displaying an interactive map with user-selectable elements (e.g., Belitz’s thumbnail images and Okamura’s clusters) and retrieving digital files (e.g., photos and videos) associated with a given location.” Pet. 15 (citing Ex. 1003 ¶ 89). Petitioner reasons that Belitz’s thumbnails “enhances a user’s experience of ‘discern[ing] between the various objects’ by providing ‘a good view of what location is associated with what.’” *Id.* at 14–15 (citing Ex. 1006 ¶ 2). According to Petitioner,

Belitz's thumbnail images displayed on the interactive map are functionally equivalent to Okamura's location-based clusters (at least because (1) both Belitz's thumbnail images and Okamura's clusters are associated with a given location, (2) both are displayed on the interactive map, and (3) both are dynamically generated/modified based on user interaction including zooming in/out on the map) and could be used as an alternative to the clusters on Okamura's map view screen.

*Id.* at 15 (citing Ex. 1003 ¶ 90). Petitioner provides further reasoning in support of the proposed combination on pages 15–25 on the Petition.

Petitioner provides the following summary of this reasoning stating that

to achieve Okamura's and Belitz's shared goal of conveniently presenting and managing digital files, a POSITA [person of ordinary skill in the art] would have been motivated to modify Okamura's user interface to include additional features as discussed in Belitz with a high expectation of success. SAMSUNG-1003, [97]. Because both references relate to organizing content according to the location associated with the content, a POSITA would have seen the combination as predictable and involve relatively simple software modifications to implement. *Id.* Specifically, a POSITA would have considered (1) the use of the Belitz thumbnails in the Okamura interactive map or (2) the use of Belitz's map view in place of Okamura's map views to be nothing more than the predictable substitution of known and equivalent interface elements. *Id.* Such implementations would have been the product of ordinary skill and common sense—as explained above, the use of maps with photo thumbnails was conventional by early 2010—and would have been obvious to try because a POSITA would have had good reason to pursue the known options within his or her technical grasp. *Id.* (citing SAMSUNG-1022; SAMSUNG-1023).

*Id.* at 22.

Petitioner asserts that in this way of combining Okamura and Belitz, a person of ordinary skill in the art “would have found it obvious to modify Okamura’s user interface, such as the map view screen 780, to display selectable thumbnail images (e.g., thumbnails 410a-d) taught by Belitz.” Pet. 33–34 (citing Ex. 1003 ¶ 116). Petitioner asserts further that “[a]dopting the location selectable thumbnail images of Belitz in Okamura’s interactive map would have resulted in an interactive map that includes selectable thumbnail images instead of selectable cluster groups (e.g., cluster map group 771) on the map.” *Id.* at 34–35 (citing Ex. 1003 ¶ 117).

*(b) Patent Owner’s Response<sup>24</sup>*

Patent Owner contends that “[n]owhere does Okamura suggest or provide any motivation to replace its cluster maps with image elements that are not maps. Indeed, doing so would entirely defeat Okamura’s stated purpose of using cluster maps.” PO Resp. 31 (citing Ex. 2023 ¶ 115; *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016); *Google LLC f/k/a Google Inc. v. Singular Computing LLC*, IPR2021-00155 (PTAB) May. 23, 2022). In support of this contention, Patent Owner contends that “Okamura provides dozens of paragraphs and numerous figures dedicated to selecting cluster map contents, choosing zoom settings and ensuring cluster map “contents . . . can be . . . easily grasped.” *Id.* at 32–33 (Ex. 2023 ¶ 119;

<sup>24</sup> Before turning to the its arguments regarding Petitioner’s first proposed combination of Okamura and Belitz, Patent Owner contests our characterization of this combination in our Institution Decision. PO Resp. 29–31. These arguments are unavailing at this point in this proceeding. Accordingly, we do not discuss them.

Ex. 1005, Figs. 6a–9, 14, 44a, 44b, ¶¶ 19, 138–157, 215–233, 231, 325, 407–411).

Patent Owner contends further that “Petitioner’s first proposed combination would eliminate all of these objectives by replacing cluster maps with images that are not maps.” PO Resp. 33 (citing Ex. 2023 ¶ 120). According to Patent Owner, “none of Belitz’s thumbnails 410a–410d convey geographical information to enable it to be used as a map.” *Id.* at 34 (citing Ex. 2022, 74:15–75:6, 80:9–81:19; Ex. 2023 ¶125).

In addition, Patent Owner contends that Belitz “carries the same noted disadvantages as the ‘related art’ references (Fujiwara and Takakura) associated with presenting a single map using the same scale everywhere on the map” such that a person of ordinary skill in the art would not have been motivated to combine Okamura with Belitz. PO Resp. 35–36 (citing Ex. 1005 ¶¶ 4–10). Patent Owner discusses the disadvantages of single maps that Okamura solves and contends that Okamura teaches away from the proposed combination. *Id.* at 36–42; *see also* PO Sur-reply 24–26.

Patent Owner also contends that the proposed combination conflicts with Belitz’s objective of preventing overlap on the map. PO Resp. 42; *see also* PO Sur-reply 26–27. According to Patent Owner, “Belitz teaches that graphical objects should not touch or even be close to one another because otherwise this ‘would clutter the view and be confusing to a user.’” *Id.* (citing Ex. 1006 ¶¶ 54–58; Ex. 2023 ¶ 145).

Patent Owner further contends that Belitz’s thumbnails reduce the availability to provide a view of what location is associated with what. PO Resp. 43. According to Patent Owner, a person of ordinary skill in the art

“reviewing Okamura would have understood that replacing cluster maps with Belitz’s thumbnails would have undermined” the goal of improving the user experience because “the cluster maps themselves convey far more information regarding what is associated with a particular location.” *Id.* (citing Ex. 2023 ¶¶ 147–153; Ex. 1005, Fig. 41; Ex. 1006, Fig. 4b; Pet. 14, 34; Ex. 2019; Ex. 2022, 80:9–81:19, 106:9–108:24). In addition, Patent Owner argues there is no need to add preview functionality to Okamura because it already has it. *Id.* at 46.

In addition, Patent Owner contends that Belitz’s thumbnails are not functionally equivalent to or known predictable alternatives to cluster maps because “Belitz’s thumbnail images cannot be used as a map.” PO Resp. 46–47; *see also* PO Sur-reply. 22–23.<sup>25</sup>

Finally, Patent Owner contends that Petitioner has failed to establish that the first combination could be used with Okamura’s FACE index screen. PO Resp. 50. Specifically, Patent Owner asserts that “Okamura, however, does not establish that a POSITA would have combined the view of Fig. 41 (corresponding to Okamura’s second embodiment) with the FACE index screen 410 (Okamura’s first embodiment) into a single method” and that Petitioner fails to articulate why a person of ordinary skill in the art would have combined these embodiments. *Id.* at 51 (citing Ex. 2023 ¶ 166).

<sup>25</sup> We do not separately summarize Patent Owner’s arguments in its Sur-reply because for the arguments that it maintains, it essentially reiterates Patent Owner’s position in its Response.

*(c) Petitioner's Reply*

Petitioner asserts that Patent Owner's arguments are without merit. Pet. Reply 15. In response to Patent Owner's argument that a person of ordinary skill in the art "would not have been motivated to modify Okamura with Belitz because 'none of Belitz's thumbnails . . . convey geographical information,'" Petitioner replies that Belitz's thumbnails do convey geographical information and the Dr. Reinman agrees. *Id.* at 16 (quoting Dr. Reinman's testimony that Belitz "shows the association of at least some pictures with the geographic location on the map depending on how many thumbnails it's currently presenting." Ex. 1040, 107:10–22). According to Petitioner, Dr. Reinman "further acknowledged that replacing cluster maps with thumbnails would not result in the loss of 'all geographic context.'" *Id.* at 17 (citing Ex. 1040, 114:6–15).

In addition, Petitioner replies to this argument by asserting that even if it were true that none of Belitz's thumbnails convey geographical information, a person of ordinary skill in the art "would have been motivated to combine Okamura and Belitz to obtain 'additional benefits.'" Pet. Reply 15 (citing Ex. 1003 ¶¶ 88–92). According to Petitioner, "in furtherance of Okamura's stated objective of better managing digital contents, the proposed combination 'enhances a user experience of "discern[ing] between the various objects" by providing "a good view of what location is associated with what.'" *Id.* at 15–16 (citing Ex. 1003 ¶ 89; Ex. 1006 ¶ 2). Petitioner replies further that

Even if the benefits obtained by incorporating Belitz's thumbnails into Okamura were to come at the expense of some other benefit offered by Okamura, a POSITA pursuing the

combination would have nevertheless been capable of weighing potential benefits associated with each, for instance recognizing that the benefits of viewing location-specific thumbnail images may be achieved in one instance and those of viewing location-specific cluster maps may be achieved in another.

*Id.* at 16 (citing *Winner Int’l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000)).

In reply to Patent Owner’s argument that “Belitz ‘carries the same noted disadvantages as the “related art” references (Fujiwara and Takakura)” mentioned in Okamura,[’]” Petitioner replies that although “in both Fujiwara and Takakura, it can be difficult to grasp the geographical correspondence between digital files because their thumbnails are not placed directly on the map,” “it is **not** difficult to grasp the geographical correspondence between digital files in Belitz because, for example, a user looking at Belitz’s FIG. 4b can easily understand which location the thumbnail 410b is associated with and which location the thumbnail 410c is associated with.” Pet. Reply 17 (citing PO Resp. 35–36; Ex. 1041 ¶ 24).

In reply to Patent Owner’s argument that the proposed combination “violates Belitz’s stated objectives of reducing overlap because, in the proposed combination, ‘at least some of graphical objects from Belitz overlaps on the map,’” Petitioner replies that “a portion of Dr. Greenspun’s illustration that was **not** shown by Patent Owner clearly shows that the combination can be achieved without any overlap.” Pet. Reply 17–18 (Citing Ex. 1003 ¶ 88; Ex. 1041 ¶¶ 25–26).

Petitioner replies further that Patent Owner’s contention “that ‘Belitz’s thumbnails reduce the ability to provide a view of “what location is associated with what,”’” ignores “the careful explanation previously

provided by Dr. Greenspun” “that incorporating the thumbnails of Belitz into Okamura would have resulted in the ‘added functionality that allows a user to preview pictures associated with a given location’ and do so in a manner that allows the user to more ‘clearly see the associations.’” Pet. Reply 19 (citing PO Resp. 43–46; Ex. 1003 ¶ 90–91).

In reply to Patent Owner’s contention that “Okamura already allows a user to ‘preview pictures,’” Petitioner replies that “the incorporation of Belitz’s thumbnails allows the user to quickly associate multiple preview pictures with multiple locations on the map without having to individually navigate through each of the clusters” such that “the combination of Okamura and Belitz helps improve user experience and overall content awareness by providing the user with a preview of the digital files associated with multiple corresponding locations.” Pet. Reply 19–20 (citing Ex. 1041 ¶ 28). Petitioner asserts that “instead of changing the ‘hallmark aspects of either of these references’ as Patent Owner contends, the proposed combination of Okamura and Belitz provides a known and predictable alternative to displaying and managing digital content in a manner that can help improve user experience.” *Id.* at 20 (citing Ex. 1003 ¶ 89; Ex. 1041 ¶ 28).

Finally, in reply to Patent Owner’s contention that “Petitioner has ‘failed to demonstrate that the first combination (based on Okamura’s second embodiment) would have been used with Okamura’s FACE index screen 410,’” Petitioner asserts that Dr. Greenspun explained in great detail how “Okamura discloses or renders obvious that the second input of displaying the face-based index screen is subsequent to the first input of



displaying a map view screen.” Pet. Reply 20 (citing Ex. 1003 ¶¶ 133–138). Petitioner replies further that “[t]o the extent Okamura does not explicitly disclose this transition, a POSITA certainly would have found it to be obvious.” *Id.* (citing Ex. 1003 ¶ 138; Ex. 1041 ¶ 29).

*(d) Discussion*

We have considered both parties evidence and arguments with regards to Petitioner’s reasoning in support of its first proposed combination. We agree with Petitioner that even if we assume that none of Belitz’s images are maps, the proposed combination has other advantages that a person of ordinary skill in the art would have been capable of weighing against any benefits lost. Pet. Reply 15–17; *Winner Int’l*, 202 F.3d at 1349 n.8.

We further agree with Petitioner that Belitz does not suffer from the same geographical deficiencies as the references discredited by Okamura in and that the proposed combination can be achieved without overlap. Pet. Reply 17–18. We also agree with Petitioner that Patent Owner’s argument the proposed combination would reduce the ability to provide a view of “what location is associated with what,” ignores Dr. Greenspun’s testimony. *Id.* at 19.

In addition, we agree with Petitioner that the proposed combination provides more than just previewing pictures, as argued by Patent Owner, and that Dr. Greenspun’s testimony adequately explains why a person of ordinary skill in the art would have found it obvious to combine Okamura’s second embodiment with its FACE index screen. Pet. Reply 20.

Furthermore, Patent Owner’s argument that Belitz’s thumbnails are not functionally equivalent or known predicable alternatives is unavailing

because Petitioner's rational in support of the proposed combination is not based on the substitution of these components.

For these reasons, we determine that Petitioner has shown, by a preponderance of the evidence, that a person of ordinary skill in the art would have been motivated to combine the teachings of Okamura and Belitz in the manner proposed in its first proposed combination of these references.

(2) *Second Combination of Okamura and Belitz*

Petitioner asserts that a person of ordinary skill in the art “would have found it obvious to replace Okamura’s map-related views (e.g., cluster map view shown in FIG. 18 or map view shown in FIG. 41) with Belitz’s map view.” Pet. 12 (citing Ex. 1003 ¶ 87). As we have determined that Petitioner has shown, by a preponderance of the evidence, that a person of ordinary skill in the art would have been motivated to combine the teachings of Okamura and Belitz in the manner proposed in its first proposed combination of these references, we do not address Petitioner’s proposed second combination.

d) *Conclusion re Claim 1*

For the reasons discussed above, and based on our review of the entire record of this proceeding, we determine that Petitioner has shown, by a preponderance of the evidence, that claim 1 is unpatentable over the combined teachings of Okamura and Belitz.

2. *Dependent Claims 2–17*

Patent Owner contends that “[b]ecause Petitioner has failed to show that any of the references identified in Ground 1 render obvious the

independent claims<sup>26</sup> on which they depend, it also fails to meet its burden for the dependent claims.” PO Resp. 60 (citing *Callaway Golf Co. v. Acushnet Co.*, 576 F.3d 1331, 1344 (Fed. Cir. 2009)).

As we have determined that Petitioner has shown that the combined teachings of Okamura and Belitz render claim 1 unpatentable, Patent Owner’s argument is unavailing. We have reviewed Petitioner’s contentions regarding the limitations of claims 2–17 as set forth in the Petition and determine that Petitioner, has shown by a preponderance of the evidence, that these claims are unpatentable over the combined teachings of Okamura and Belitz. Pet. 55–81.

### 3. *Claims 18 and 19*

For claim 18, Petitioner asserts that “Okamura describes that selecting a face-based thumbnail image (‘when a desired cluster is determined **by a user operation**’) causes the user interface to display ‘contents included in the face cluster [].’” Pet. 78 (citing Ex. 1005 ¶ 261, Figs. 21, 24; Ex. 1003 ¶ 187). Petitioner asserts further that “the content display area 441 includes a representation of each digital file in the third set of digital files.” *Id.* at 79 (citing Ex. 1005 ¶ 261; Ex. 1003 ¶ 188). Petitioner reasons that

To the extent that Okamura does not expressly teach displaying the first name in the first person view, a POSITA would have found it obvious to display the **first name** (e.g., as part of the content information 452 or next to the image 461 adjacent to the face) to improve recognition of the first person (as similarly done in the people view where “pieces of information 433 related to the thumbnail image 432 are

<sup>26</sup> We note that claim 1 is the only independent claim in this proceeding.

displayed” including “the name of the person corresponding to the face”; *see* [1i].

Pet. 79–80 (citing Ex. 1005 ¶ 247; Ex. 1003 ¶ 189). Petitioner asserts that “Okamura describes ‘content information 452 . . . as information related to a content, for example, the time of generation of the content, the time range of the contents of a cluster to which the content belongs, *and the like*’” and that “[f]rom this description and Okamura’s earlier disclosure of displaying a name of a person corresponding to a face cluster, a POSITA would have found it obvious to display, in the person view as part of the content information, the name of the person associated with the cluster.” *Id.* at 80 (citing Ex. 1005 ¶ 255; 1003 ¶ 189).

For claim 19, Petitioner refers to its discussion of claim 18 and states that “Okamura describes the second person view responsive to a selection of the second person selectable thumbnail image.” Pet. 80 (citing Ex. 1003 ¶ 190).

Patent Owner contends that “claim 18 requires (i) displaying a ‘first person’ view in response to an ‘input’ from the people view and (ii) that the first person view displayed in response to that ‘input’ must ‘includ[e] . . . (i) the first name and (ii) a representation of each digital file in the third set of digital files.’” PO Resp. 61. Patent Owner asserts further that “Okamura does not teach that selecting a thumbnail image in Fig. 21 (*people view*) causes the view of Okamura Fig. 24 (*first person view*) to be displayed.” *Id.* at 62 (citing Ex. 2023 ¶ 197). According to Patent Owner, “[i]nstead, “Okamura specifically teaches that the view of ‘FIG. 24 . . . is displayed when the mouse is placed over [a] face portion . . . ‘on the content playback screen 450 shown in FIG. 23.’” *Id.* (citing Ex. 1005 ¶ 261; Ex. 2023 ¶ 198).

Petitioner replies that “Patent Owner appears to be arguing that only a single initial user “input” and no other additional actions must cause both the first name and the representation of digital files to appear.” Pet. Reply 23–24 (citing PO Resp. 61). Patent Owner responds that “[t]he Reply does not dispute that the Petition misread Okamura’s disclosure . . . or otherwise address th[e] deficiency” pointed out in its Response. PO Sur-reply 30–31.

We agree with Patent Owner that the Petition does not adequately address how selecting a thumbnail in Figure 21 (identified by Petitioner as Okamura’s people view) would result in the display of Figure 24 (identified by Petitioner as Okamura’s first person view). PO Resp. 62; Pet. 79. As noted by Patent Owner, Figure 24 is displayed when the mouse is hovered over a face portion in Figure 23, not Figure 21. Thus, even if we credit Dr. Greenspun’s testimony that “whether to show certain text all the time or only just part of the time is simply a matter of ‘design choice and maybe a function of user preference’” (Ex. 2022, 132:6–12), the Petition does not adequately explain how the combined teachings of Okamura and Belitz render claim 18 obvious.

For these reasons, we determine that Petitioner does not show, by a preponderance of the evidence, that claim 18 is unpatentable over the combined teachings of Okamura and Belitz.<sup>27</sup>

<sup>27</sup> Our determination that the challenge to claim 18 in this proceeding fails because of a deficiency in the Petition should not be taken as a determination as to whether Okamura and Belitz render claim 18 unpatentable.

#### 4. *Claim 19*

For claim 19, Petitioner refers to its discussion of claim 18 and adds that “Okamura describes the second person view responsive to a selection of the second person selectable thumbnail image.” Pet. 80 (citing Ex. 1003 ¶ 190).

The deficiencies in the Petition discussed in the preceding section apply to claim 19 as well. For the reasons discussed above we determine that Petitioner does not show, by a preponderance of the evidence, that claim 19 is unpatentable over the combined teachings of Okamura and Belitz.<sup>28</sup>

#### 5. *Conclusion*

For the foregoing reasons, and on the record presently before us, we determine that Petitioner has demonstrated, by a preponderance of the evidence, that claims 1–17 of the ’228 patent are unpatentable over Okamura and Belitz, but has not demonstrated, by a preponderance of the evidence, that claims 18 and 19 are unpatentable over Okamura and Belitz.

#### J. *Outstanding Motions*

On August 31, 2023, Patent Owner filed a Motion for Entry of Protective Order. Paper 47 (First Motion”). In the First Motion, Patent Owner moved for entry of a Protective Order similar to the Protective Orders entered in the *Unified* proceeding and the *Apple* proceeding. *Id.* at 1–2, Appendix. Patent Owner indicated that Petitioner does not oppose the First Motion or entry of the Protective Order. *Id.* at 1.

<sup>28</sup> See n. 25.

On September 29, 2023, Patent Owner filed a Motion to Seal. Paper 51 (“Second Motion”). In the Second Motion, Patent Owner moved to seal Patent Owner’s Motion to Terminate (Paper 52) and Exhibits 2062, 2063, 2067, 2068, 2069, 2071, 2072, 2073, 2074, 2077, 2078, 2083, 2084, 2085, 2090 and 2099. *Id.* at 2. Patent Owner indicated that Petitioner does not oppose the Second Motion. *Id.* at 2.

On October 13, 2023, Petitioner filed a Motion to Seal. Paper 54 (“Third Motion”). In the Third Motion, Petitioner moved to seal its Reply to Patent Owner’s Motion to Terminate (Paper 53).

On October 31, 2023, Patent Owner filed a Motion to Seal. Paper 56 (“Fourth Motion”). In the Fourth Motion, Patent Owner moved to seal its Reply in Support of its Motion to Terminate (Paper 57). *Id.* at 1. Patent Owner indicated that Petitioner does not oppose the Fourth Motion.

On November 17, 2023, both parties filed a Joint Motion to Seal. Paper 60 (“Fifth Motion”). In the Fifth Motion, both parties moved to seal their respective demonstrative exhibits. Exs. 2116 and 1047.

As provided under Rule 42.54(a), “[t]he Board may, for good cause, issue an order to protect a party from disclosing confidential information,” including forbidding the disclosure of protected information or specifying the terms under which such information may be disclosed. 37 C.F.R. § 42.54(a). The Board also observes a strong policy in favor of making all information filed in *inter partes* review proceedings open to the public. *See Argentum Pharms. LLC v. Alcon Research, Ltd.*, IPR2017-01053, Paper 27 at 3–4 (PTAB Jan. 19, 2018) (informative).

Under 37 C.F.R. § 42.14, the default rule is that all papers filed in such proceedings are available to the public. Only “confidential information” is subject to protection against public disclosure. 35 U.S.C. § 326(a)(7) (2018); 37 C.F.R. § 42.55. The Board also observes a strong policy in favor of making all information filed in *inter partes* review proceedings open to the public. *See Argentum Pharms. LLC v. Alcon Research, Ltd.*, IPR2017-01053, Paper 27, 3–4 (PTAB Jan. 19, 2018) (informative). The moving parties bear the burden of showing the requested relief should be granted. 37 C.F.R. § 42.20(c). To establish “good cause” for the requested relief, the Parties must make a sufficient showing that:

(1) the information sought to be sealed is truly confidential, (2) a concrete harm would result upon public disclosure, (3) there exists a genuine need to rely in the trial on the specific information sought to be sealed, and (4), on balance, an interest in maintaining confidentiality outweighs the strong public interest in having an open record.

*Argentum*, Paper 27 at 3–4; *see also Corning Optical Commc’ns RF, LLC, v. PPC Broadband, Inc.*, IPR2014-00440, Paper 46 at 2 (PTAB April 6, 2015) (requiring a showing that information has not been “excessively redacted”); *see also* 37 C.F.R. § 42.54(a).

Regarding the First Motion, Patent Owner states that “[t]he proposed Protective Order is similar to the protective order the Board entered in the *Unified* Proceeding to address Unified’s concerns over the handling of documents and testimony containing Unified’s confidential business information relating to Unified’s members and business operations.” *Id.* at 1 (citing Ex. 2028 (Motion for Entry of Protective Order in *Unified* Proceeding); Ex. 2039 (Order granting motion in *Unified* Proceeding)).



Patent Owner further states that “[t]he proposed Protective Order is identical (with the exception of a correction of a minor typo) to the protective order the Board entered in the Apple proceeding.” *Id.* at 1–2 (citing Ex. 2040 (Motion for Entry of Protective Order in *Apple* Proceeding); Ex. 2041 (Order granting motion in *Apple* Proceeding)). Patent Owner asserts that it “seeks discovery of similar Unified materials in the present proceeding” and that “[t]he proposed Protective order will also govern the handling of confidential materials produced by Petitioner.” *Id.* at 2.

In addition, Patent Owner states that “[t]he proposed Protective Order differs from the Board’s Default Protective Order . . . in that the proposed Protective Order includes a “HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY” designation at Unified’s and [Petitioner’s] request.” Paper 47, 2. Patent Owner further states that “the proposed Protective Order identifies the persons to which access to confidential information is limited and clarifies the treatment of confidential materials unless the Board determines that information does not qualify for confidential treatment.” *Id.*

Regarding the Second Motion, Patent Owner states that

(1) the forthcoming unredacted portions of the Motion to Terminate and Exhibit 2085, (2) the entirety of Exhibits 2063, 2067, 2068, 2069, 2072, 2073, 2077, 2078, 2083, 2084, and 2099; and (3) portions of Exhibits 2062, 2071, 2074, and 2090 (the redacted versions of these exhibits are Exhibits 2049, 2045, 2086, and 2091, respectively) contain non-public, highly confidential proprietary business information about Unified’s members (e.g., Apple and Samsung) and/or information regarding Unified’s business operations that Unified maintains as confidential.

Paper 53, 3–4. Patent Owner states that “[d]ue to the nature of Exhibits 2063, 2067, 2068, 2069, 2072, 2073, 2077, 2078, 2083, 2084, and 2099, Patent Owner and the relevant parties cannot meaningfully provide redacted versions of these documents, and Patent Owner requests that they remain under seal in their entirety. *Id.* at 4.

Patent Owner states further that “public disclosure of this information ‘would expose Unified’s business model and confidential business activities’” and “Unified represents that it has a contractual obligation with third parties, including Samsung and Apple, to maintain the confidentiality of the information contained within the relevant exhibits,” such that “[i]f such information were publicly disclosed, ‘Unified’s members wishing to remain confidential would be adversely affected.’” *Id.*; *Unified Patents*, IPR2021-01413, Paper 26 at 3. In addition, Patent Owner states that Unified “represents that the public will not be harmed by sealing its confidential business information.” *Id.* 4–5.

Patent Owner also states that “the exhibits at issue are directly relevant to whether Petitioner is a real party in interest (‘RPI) to Unified’s IPR” and that it “must rely on confidential information to prove that Petitioner is an RPI to Unified’s IPR.” Paper 51, 5. Patent Owner asserts that “on balance, the interest in maintaining confidentiality outweighs the public interest in having an open record.” *Id.*

Patent Owner makes similar statements with respect to its Reply in Support of its Motion to Terminate in the Fourth Motion. *See* Paper 56, 2–4.

Regarding the Third Motion, Petitioner states that its “Reply to Patent Owner’s Motion to Terminate includes confidential information designated

as Protective Order Material pursuant to the Protective Order.” Paper 54, 2. Petitioner asserts that “failing to seal the confidential version of the Petitioner’s Reply to Patent Owner’s Motion to Terminate would frustrate the purpose of sealing the confidential evidence.” *Id.* Petitioner asserts further that “the public would still have full access to the nature of the information and the conclusions reached using the publicly available information. Such access should adequately fulfill the needs of the public to maintain a complete and understandable file history, while still protecting confidential and proprietary information.” *Id.*

Regarding the Fifth Motion, the parties state that “the Demonstratives rely on and discuss the confidential information disclosed in exhibits previously filed under seal.” Paper 60, 1. In addition, the parties make statements similar to the statements made by Patent Owner in the Second and Fourth Motions. *Id.* at 2–5.

Upon reviewing the proposed Protective Order (Paper 47, Appendix), we conclude that the differences from the Board’s Default Protective Order address the parties’ obligations and do not limit the Board’s authority in this proceeding.

Upon considering the parties representations and arguments in all of the Motions, the contents of the exhibits sought to be sealed in their entirety and the contents of the information sought to be redacted, we conclude that the parties have established good cause for sealing the request documents.

### III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated, by a preponderance of the evidence, that claims 1–17 of U.S.

**NON-PUBLIC VERSION—PROTECTIVE ORDER MATERIAL**

IPR2022-00222

Patent 10,621,228 B2

Patent No. 10,621,228 B2 are unpatentable, but has not demonstrated, by a preponderance of the evidence that claims 18 and 19 are unpatentable on the bases set forth in the following table.<sup>29</sup>

<b>Claims</b>	<b>35 U.S.C. §</b>	<b>References</b>	<b>Claims Shown Unpatentable</b>	<b>Claims Not Shown Unpatentable</b>
1–19	103(a)	Okamura, Belitz	1–17	18, 19
<b>Overall Outcome</b>			1–17	18, 19

**IV. ORDER**

In consideration of the foregoing, it is hereby

ORDERED that Patent Owner's motion to enter the proposed Protective order (Paper 47, Appendix) is *granted* and the Protective Order is entered;

FURTHER ORDERED that Patent Owner's request to seal Exhibits 2062, 2063, 2067, 2068, 2069, 2071, 2072, 2073, 2074, 2077, 2078, 2083, 2084, 2085, 2090 and 2099 is *granted*;

---

<sup>29</sup> Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Final Decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

FURTHER ORDERED that Patent Owner's requests to seal redacted portions of Patent Owner's Motion to Terminate and Patent Owner's Reply in Support of its Motion to Terminate is *granted*;

FURTHER ORDERED that Petitioner's request to seal redacted portions of Petitioner's Reply to Patent Owner's Motion to Terminate is *granted*;

FURTHER ORDERED that the parties request to seal their respective Demonstrative Exhibits is *granted*;

FURTHER ORDERED that Petitioner has demonstrated by a preponderance of the evidence that claims 1–17 of U.S. Patent No. Patent 10,621,288 B2 are unpatentable;

FURTHER ORDERED that Petitioner has not demonstrated by a preponderance of the evidence that claims 18 and 19 are unpatentable;

FURTHER ORDERED that, no later than ten business days after the issuance of this Final Written Decision, the parties may file a joint motion to seal portions of this Final Written Decision, explaining why portions of it should remain under seal, and including as an attachment a redacted version of the Final Written Decision that can be made publicly available;

FURTHER ORDERED that the present decision shall remain under seal until any joint motion to seal the Final Written Decision is resolved;

FURTHER ORDERED that the present decision shall be made public if, after the expiration of the time for the parties to file a joint motion to seal, no such motion has been filed; and

FURTHER ORDERED that because this is a Final Written Decision, any party to the proceeding seeking judicial review of this Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

FOR PETITIONER:

Walter Renner  
Jeremy Monaldo  
Hyun Jin In  
FISH & RICHARDSON P.C.  
axf-ptab@fr.com  
jjm@fr.com  
in@fr.com

FOR PATENT OWNER:

Jennifer Hayes  
George Dandalides  
Matthew Werber  
Angelo Christopher  
Daniel Schwartz  
NIXON PEABODY LLP  
jenhayes@nixonpeabody.com  
gdandalides@nixonpeabody.com  
mwerber@nixonpeabody.com  
achristopher@nixonpeabody.com  
djschwartz@nixonpeabody.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

SAMSUNG ELECTRONICS CO., LTD.,  
Petitioner,

v.

MEMORYWEB, LLC,  
Patent Owner.

---

IPR2022-00221  
Patent 10,423,658 B2

---

Before LYNNE H. BROWNE, NORMAN H. BEAMER, and  
KEVIN C. TROCK, *Administrative Patent Judges*.

BROWNE, *Administrative Patent Judge*.

JUDGMENT  
Final Written Decision  
Determining Some Challenged Claims Unpatentable  
*35 U.S.C. § 318(a)*



IPR2022-00221  
Patent 10,423,658 B2

## I. INTRODUCTION

We have authority to hear this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, we determine that Petitioner, Samsung Electronics Co., Ltd. (“Samsung”), has shown by a preponderance of the evidence that claims 1–13 of U.S. Patent No. 10,423,658 B2 (Ex. 1001, “the ’658 Patent”) are unpatentable, but has not shown by a preponderance of the evidence that claims 14 and 15 are unpatentable. *See* 35 U.S.C. § 316(e) (2018); 37 C.F.R. § 42.1(d) (2019).

### A. *Procedural History*

The Petition (Paper 2, “Pet.” or “Petition”) requested *inter partes* review of the claims 1–15 of the ’658 Patent (the “challenged claims”). Patent Owner, MemoryWeb, LLC, filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). With our authorization, Petitioner filed a Preliminary Reply (Paper 8), and Patent Owner filed a Preliminary Sur-reply (Paper 9). Based upon the record at that time, we instituted *inter partes* review on all challenged claims on the grounds presented in the Petition. Paper 10 (“Institution Decision” or “Dec.”).

After institution, Patent Owner filed a Response (Paper 18, “PO Resp.”), Petitioner filed a Reply (Paper 22, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 34, “PO Sur-reply”).

On June 12, 2023, an oral hearing was held. The transcript of the hearing (Paper 39, “Tr.”) was entered in the record.

### B. *Real Party-in-Interest*

Petitioner states that “Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. are the real parties in interest.” Pet. 108. Patent

IPR2022-00221  
Patent 10,423,658 B2

Owner states that it, MemoryWeb, LLC, is the real party in interest. Paper 3, 2.

*C. Related Matters*

According to the parties, the '658 Patent was asserted in the following district court proceedings: *MemoryWeb, LLC v. Samsung Electronics Co., Ltd. et al.*, 6:21-cv-00411 (W.D. Tex.), Pending; *MemoryWeb, LLC v. Apple, Inc.*, No. 6-21-cv-00531 (W.D. Tex.), Pending; and *MyHeritage (USA), Inc. et al. v. MemoryWeb, LLC*, No. 1-21-cv-02666 (N.D. Il.), Dismissed. Pet. 109; Paper 3, 2.

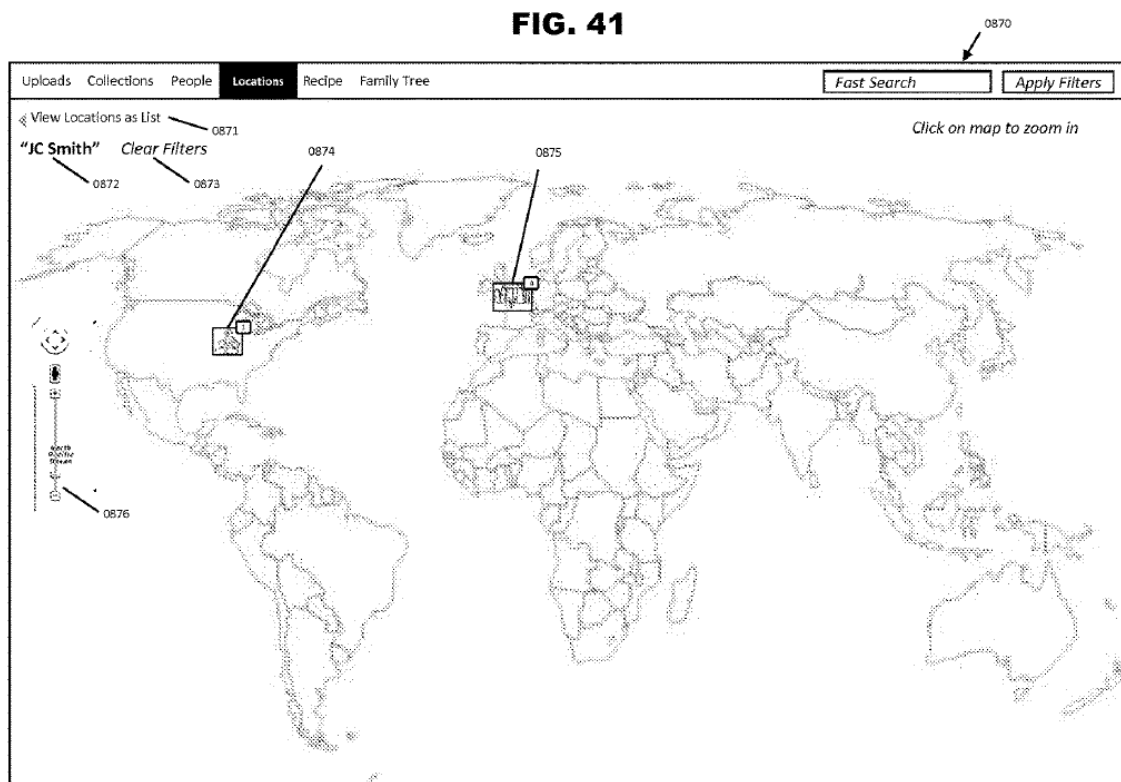
Petitioner states that “[t]he '658 patent is also the subject of an IPR proceeding filed by Apple Inc. (IPR2022-00033)” but that “Samsung is not a real party-in-interest to this IPR proceeding.” Pet. 109.

Patent Owner states that “[t]he '658 patent is related to the following U.S. Patents: 9,098,531 (‘the '531 patent’); 9,552,376 (‘the '376 patent’); 10,621,228 (‘the '228 patent’); 11,017,020 (‘the '020 patent’); 11,163,823 (‘the '823 patent’), and 11,170,042 (‘the '042 patent’).” Paper 3, 2. Patent Owner additionally identifies the following IPR proceedings as related matters: *Samsung Electronics Co., LTD. v. MemoryWeb LLC*, IPR2022-00222 (‘228 patent); *Apple Inc. v. MemoryWeb, LLC*, IPR2022-00111 (‘020 patent); *Apple Inc. v. MemoryWeb, LLC*, PGR2022-00006 (‘020 patent); *Apple Inc. v. MemoryWeb, LLC*, IPR2022-00033 (‘658 patent); *Apple Inc. v. MemoryWeb, LLC*, IPR2022-00032 (‘376 patent); *Apple Inc. v. MemoryWeb, LLC*, IPR2022-00031 (‘228 patent); *Unified Patents, LLC v. MemoryWeb, LLC*, IPR2021-01413, (‘228 patent); and U.S. Patent Application No. 17/459,933. *Id.* at 2–3.

IPR2022-00221  
 Patent 10,423,658 B2

#### *D. The '658 Patent*

The '658 Patent relates to a computer-implemented system and method for managing and using digital files such as digital photographs. Ex. 1001, 1:16–19. In particular, the '658 Patent aims to provide an “interactive platform” for users to gather, organize, view, navigate, search, share and archive digital files, e.g., digital photographs and videos. *Id.* at 13:12–18, 13:56–59. The interactive platform may be provided via an “Application” having various “Application Views” for interaction with and organization of digital files. *Id.* at 8:59–9:7. A screenshot of an exemplary type of Application View, a “Location Application View,” is shown in Figure 41, reproduced below. *Id.* at 4:3–4.

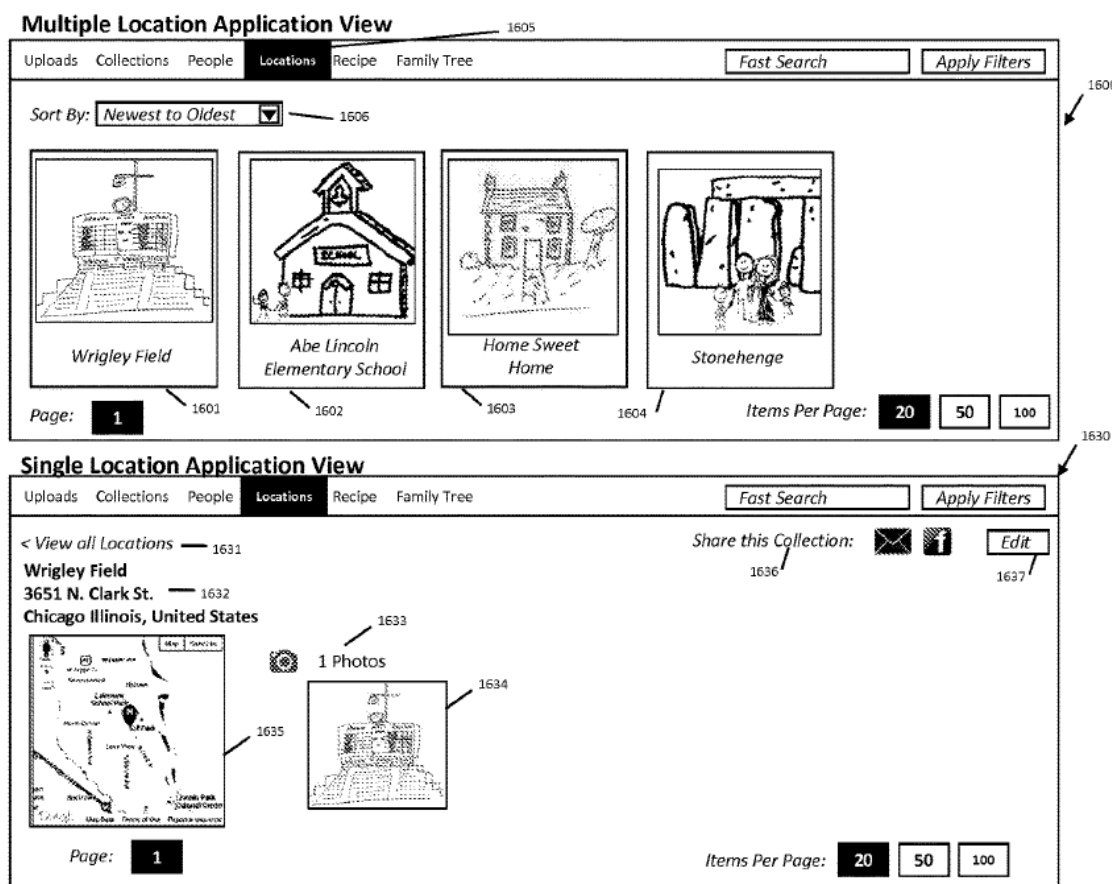


As shown in the Location Application View interface of Figure 41, “Digital Files are displayed within an interactive map (Google map shown as

IPR2022-00221  
 Patent 10,423,658 B2

an example).” Ex. 1001, 29:25–29. Further, “[i]n this view, individual or groups of Digital Files are illustrated as photo thumbnails (see indicators 0874 and 0875) on the map and the user can select the thumbnail to see all the Digital Files with the same location.” *Id.* at 29:32–36. In the case that the user selects either one of the thumbnails, a “Single Location Application View” interface corresponding to the location is presented to the user, as shown in the bottom portion of Figure 34 reproduced below. *Id.*

**FIG. 34**



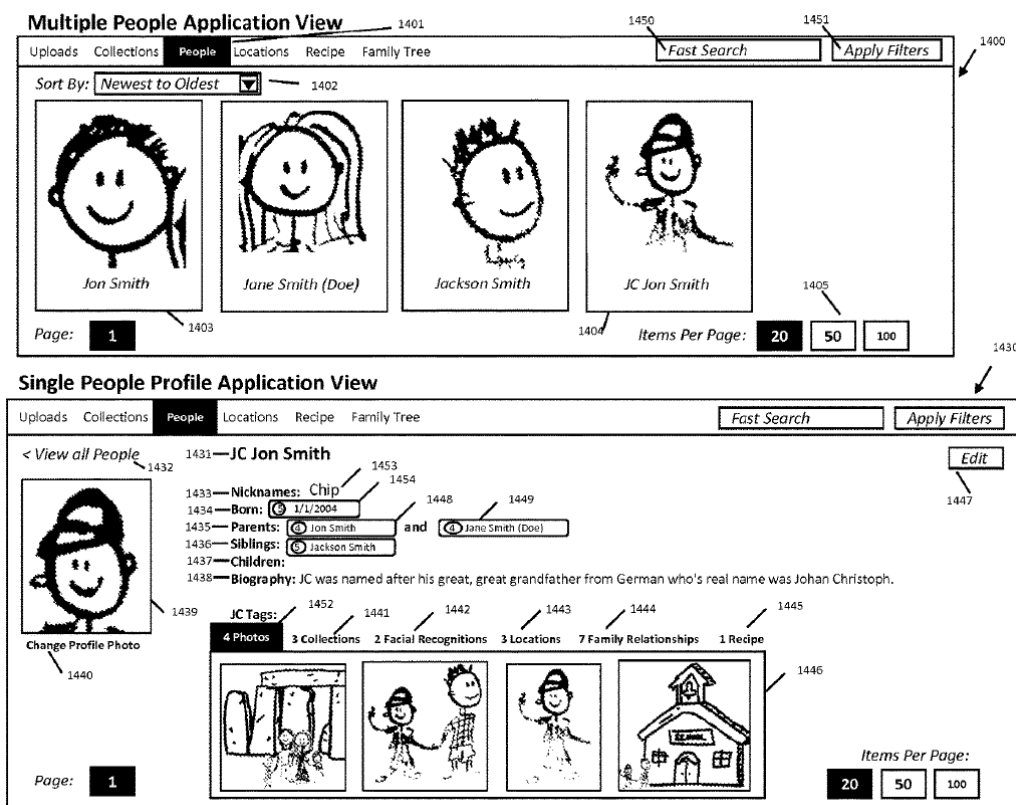
Focusing on the single location (1630) Locations Application View, an “individual location name is displayed at the top of the page (1632).” Ex. 1001, 24:22–24. The single location Locations Application View further displays “[t]humbnails of each Digital File within the specific collections” of

IPR2022-00221  
Patent 10,423,658 B2

digital files. *Id.* at 24:25–26; *see id.* at 23:56–59, Fig. 33. In the example shown in Figure 34, “one photo (1633) taken at Wrigley Field (1634) that is associated with the location called Wrigley Field” is displayed. *Id.* at 24:26–28.

Turning to another Application View described by the '658 Patent, a “Multiple People Application View” is shown in Figure 32 reproduced below. *Id.* at 3:58.

**FIG. 32**



The Multiple People Application View “can be seen by selecting ‘People’ (1401) from any of the Application Views within the Application.” Ex. 1001, 22:46–48. As shown in Figure 32, “Multiple People Application View” 1400 “display[s] all the people that were created within the user's Application.” *Id.* at 22:44–46. “For each person, a thumbnail of their face

IPR2022-00221  
 Patent 10,423,658 B2

along with their name is depicted. In this figure, Jon Smith (1403) and JC Jon Smith (1404) along with some other people are illustrated.” *Id.* at 22:52–55.

Further, “[f]or each person,” there are “tags that are associated to [that] person.” Ex. 1001, 23:4–6. In “Single People Profile Application View” 1430, associated tags are used show that there are, e.g., “four photos (1452) associated with that person.” *Id.* at 23:6–9. In another example, the person “grandma” has been tagged in, and so, is associated with, 100 photos. *Id.* at 24:56–59. Put another way, digital files have tags, e.g., in a “Tag Block of the Relationship Table for the Digital File,” which associate a particular digital file with a particular person or otherwise characterizes and documents the digital file. *See id.* at 20:1–6; 24:42–52.

#### *E. Challenged Claims*

Petitioner challenges claims 1–15 of the ’658 Patent. Pet. 1. Claim 1, the only independent claim is reproduced below with Petitioner’s limitation labeling included:

[1pre] 1. A computer-implemented method of displaying at least a portion of a plurality of (i) digital photographs, (ii) videos, or (iii) a combination of (i) and (ii), each of the digital photographs and videos being associated with a geotag indicative of geographic coordinates where the respective digital photograph or video was taken, the method comprising:

[1a] displaying an application view on a video display device including displaying a plurality of selectable elements, the plurality of selectable elements including a location selectable element;

[1b] responsive to a click or tap of the location selectable element, displaying a map view on a video display device, the displaying the map view including displaying:

IPR2022-00221  
Patent 10,423,658 B2

- [1c] (i) a representation of an interactive map;
- [1d] (ii) a first location selectable thumbnail image at a first location on the interactive map, the first location being associated with the geographic coordinates of a first geotag, a first set of digital photographs and videos including all of the digital photographs and videos associated with the first geotag;
- [1e] (iii) a first count value image partially overlapping the first location selectable thumbnail image, the first count value image including a first number that corresponds to the number of digital photographs and videos in the first set of digital photographs and videos;
- [1f] (iv) a second location selectable thumbnail image at a second location on the interactive map, the second location being associated with the geographic coordinates of a second geotag, a second set of digital photographs and videos including all of the digital photographs and videos associated with the second geotag; and
- [1g] (v) a second count value image partially overlapping the second location selectable thumbnail image, the second count value image including a second number that corresponds to the number of digital photographs and videos in the second set of digital photographs and videos;
- [1h] responsive to a click or tap of the first location selectable thumbnail image, displaying a first location view on the video display device, the displaying the first location view including displaying (i) a first location name associated with the first geotag and (ii) a scaled replica of each of the digital photographs and videos in the first set of digital photographs and videos, the displayed scaled replicas of each of the digital photographs and videos in the first set of digital photographs and videos not being overlaid on the interactive map; and
- [1i] responsive to a click or tap of the second location selectable thumbnail image, displaying a second location view on the video display device, the displaying the second location view including displaying (i) a second location name corresponding to the

IPR2022-00221

Patent 10,423,658 B2

second geotag and (ii) a scaled replica of each of the digital photographs and videos in the second set of digital photographs and videos, the displayed scaled replicas of each of the digital photographs and videos in the second set of digital photographs and videos not being overlaid on the interactive map.

Ex. 1001, 35:13–36:7; Pet. 5–6.

*F. Asserted Grounds of Unpatentability*

Petitioner asserts the following grounds of unpatentability:

<b>Claim(s) Challenged</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>
1–15	103	Okamura, <sup>1</sup> Belitz <sup>2</sup>
3, 4	103	Okamura, Belitz, Rasmussen <sup>3</sup>
6–12	103	Okamura, Belitz, Gossweiler <sup>4</sup>
8, 9, 11, 12	103	Okamura, Belitz, Yee <sup>5</sup>
8, 9, 11, 12	103	Okamura, Belitz, Gossweiler Yee

Pet. 11. In addition to the references listed above, Petitioner relies on the Declaration of Philip Greenspun, Ph.D. (Ex. 1003). Patent Owner submits a Declaration of Glenn Reinman, Ph.D. (Ex. 2001).

---

<sup>1</sup> Okamura et al., U.S. Patent Publication No. 2011/0122153 A1, published May 26, 2011 (Ex. 1005) (“Okamura”).

<sup>2</sup> Belitz et al., U.S. Patent Publication No. 2010/0058212 A1, published March 4, 2010 (Ex. 1006) (“Belitz”).

<sup>3</sup> Rasmussen, U.S. Patent Publication No. 2006/0206264 A1, published September 14, 2006 (Ex. 1007) (“Rasmussen”).

<sup>4</sup> Gossweiler et al., U.S. Patent Publication No. 2008/0276279 A1, published November 6, 2008 (Ex. 1038) (“Gossweiler”).

<sup>5</sup> Yee et al., U.S. Patent Publication No. 2009/0210793 A1, published August 20, 2009 (Ex. 1041) (“Yee”).



IPR2022-00221  
Patent 10,423,658 B2

## II. ANALYSIS

### A. *Principles of Law: Obviousness*

A claim is unpatentable as obvious under 35 U.S.C. § 103 if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations.<sup>6</sup> *See Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

The Supreme Court has made clear that we apply “an expansive and flexible approach” to the question of obviousness. *KSR*, 550 U.S. at 415. Whether a patent claiming the combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 417. Reaching this conclusion, however, requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness requires the additional showing that a person of ordinary skill would have

---

<sup>6</sup> The current record does not present or address any evidence of nonobviousness.

IPR2022-00221  
Patent 10,423,658 B2

selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. *Id.*

*B. Level of Ordinary Skill*

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17. “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991).

Petitioner contends that a person of ordinary skill in the art at the time of the invention of the ’658 Patent would have had the following education and experience:

(1) a bachelor’s degree in computer science, computer engineering, electrical engineering, or a related field, and (2) at least one year of experience designing graphical user interfaces for applications such as photo organization systems . . . Additional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education.

Pet. 12 (citing Ex. 1003 ¶ 27). Patent Owner does not challenge this definition of the level of skill at this time. Prelim. Resp. 45.

For purposes of this Decision, we also adopt Petitioner’s proposal as reasonable and consistent with the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art may reflect an appropriate level of skill in the art).

*C. Claim Construction*

Pursuant to 37 C.F.R. § 42.100(b), we apply the claim construction standard as set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir.

IPR2022-00221  
 Patent 10,423,658 B2

2005) (en banc). Under *Phillips*, claim terms are generally given their ordinary and customary meaning as would be understood by one with ordinary skill in the art in the context of the specification, the prosecution history, other claims, and even extrinsic evidence including expert and inventor testimony, dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Phillips*, 415 F.3d at 1312–17. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (in the context of an *inter partes* review, applying *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner asserts that “no formal claim constructions are necessary in this proceeding.” Pet. 11–12. For claim 1, Patent Owner proposes claim construction for the terms “application view” and “responsive to a click or tap . . . displaying.” PO Resp. 13–25. For claim 5, Patent Owner proposes claim construction for “the displaying the people view including displaying: . . . a name associated with the first person . . . and . . . a name associated with the second person.” *Id.* at 25–28. For claim 13, Patent Owner proposes claim construction for “the displaying the album view including displaying: . . . a first album name . . . and . . . a second album name.” *Id.* at 29–30. We consider each of Patent Owner’s proposed constructions.

IPR2022-00221  
Patent 10,423,658 B2

*1. Application View*

Patent Owner contends that the claim term “application view” should be construed to require an “application view that is distinct from the other claimed views.” PO Resp. 13. Specifically, Patent Owner contends that

The claim language dictates that the ‘application view’ is separate and distinct relative to: (i) the map view and first/second location views in claim 1; (ii) the people view in claim 5; (iii) the first/second person views in claims 7 and 10; (iv) the album view in claim 13; and (vi) the first/second album views in claims 14 and 15.

*Id.* at 13–14. In particular, Patent Owner identifies Figure 35 as “an example of an application view including a plurality of selectable elements that is distinct from the other views.” *Id.* at 17.

Petitioner replies that “the ’658 patent makes clear, [that] FIG. 35 is merely one of various ‘application views’ that are provided as *examples* in the ’658 patent, including those shown in FIGS. 32–34 and 36.” Pet. Reply 2 (citing Ex. 1001, 9:18–22; Ex. 1046, 40:8–21; Ex. 1047 ¶ 4). Petitioner asserts that “the ’658 patent explicitly refers to its people and location views as the ‘People *Application* View’ and the ‘Location *Application* View.’” *Id.* (citing Ex. 1001, Figs. 32, 34, 3:58–4:4). Petitioner asserts further that “[t]here is nothing in the ’658 patent that distinguishes the ‘Uploads Application View’ in FIG. 35 from the other application views in the ’658 patent, other than its focus on ‘Uploads’ as compared to ‘People’ or ‘Location.’” *Id.* (citing Ex. 1047 ¶ 4).

Petitioner replies further that “Dr. Reinman acknowledged during deposition that the specification of the ’658 patent provides ‘examples of different application views’ and that ‘a view like a location view is *also* an application view in the spec of the patent.’” Pet. Reply 3 (citing Ex. 1046,

IPR2022-00221  
 Patent 10,423,658 B2

17:12–18, 42:9–43:15). Petitioner asserts that “according to the specification of the ’658 patent and per Dr. Reinman’s own testimony, a particular view can ‘qualify as both’ an application view and a location view.” *Id.*

The ’658 Patent states, “Application Views—The Application Views utilizes the Application’s ability to associate Digital Tags to Digital Files and display them in customized views such as Uploads, Collections, Slideshow, Location, Timeline, Family Tree, People Profile, and Recipes.” Ex. 1001, 9:18–22. Thus, we understand “application view” to mean a customized display of digital tags or files and we adopt this definition of “application view.” *Id.*

Turning to Patent Owner’s contention that the claim language requires the application view of be separate and distinct relative to other claimed views, we do not agree with Patent Owner’s sweeping statement. Rather, each claim must be considered to determine if the structure of the claim requires a view that is separate and distinct from the application view or if the claim further defines the application view.

## 2. *Responsive to a Click or Tap . . . Displaying*

Patent Owner contends that “the plain and ordinary meaning of the phrase ‘responsive to a click or tap of . . . displaying’ requires a cause-effect relationship between (i) a click or tap of a certain selectable element and (ii) displaying a certain view or content.” PO Resp. 19 (citing Ex. 2023 ¶¶ 126, 130, 147–149, 156, 164). Specifically, for claims 3–5, 7, and 9–15,<sup>7</sup> which

---

<sup>7</sup> Patent Owner does not refer to claim 1, from which these claims depend, which is the first claim to use this claim terminology. We focus our

IPR2022-00221  
Patent 10,423,658 B2

recite this limitation, Patent Owner contends that “[t]he specification confirms that the phrase ‘responsive to . . . displaying’ requires [direct] causation.” *Id.* at 20; *see also id.* at 22–24. Patent Owner further contends that “the specification does not disclose any examples of additional clicks or taps or intervening views between the relevant click or tap and the display of the relevant view or content.” *Id.* at 24–25 (citing Ex. 2023 ¶¶ 127, 135, 152, 159, 168; *Am. Calcar*, 651 F.3d 1318, 1340 (Fed. Cir. 2011)).

In addition, Patent Owner contends that “[t]he plain meaning of ‘responsive to’ is also confirmed by extrinsic evidence. Patent Owner asserts that the definition of ‘responsive’ is ‘saying or doing something as a reaction to something or someone’ or ‘constituting a response or made in response to something.’” PO Resp. 25 (citing Ex. 2025; Ex. 2026; Ex. 2023 ¶¶ 128, 135, 152, 156, 165). Patent Owner further contends that “[w]hen deposed, Dr. Greenspun acknowledged that for the ‘people view,’ a ‘computer programmer’ would understand the words of these claim limitations to mean ‘a user does something like a click or tap, and then the software causes the people view to be displayed.’” *Id.* (citing Ex. 2024, 81:7–20, 92:3–13, 205:9–207:13).

Petitioner replies, “as Dr. Greenspun explained during deposition, a POSITA<sup>8</sup> would have recognized that the term ‘responsive to’ merely requires that the second event happen ‘subsequent to’ the first event based on a combination of user interaction and software implementation.” Pet. Reply 4 (citing Ex. 2022, 42:21–44:22; Ex. 2024, 108:20–109:12; Ex. 1047

---

discussion on claim 1, as the interpretation of this claim terminology must be the same for claims 1, 3–5, 7, and 9–15.

<sup>8</sup> Person of ordinary skill in the art.

IPR2022-00221  
Patent 10,423,658 B2

¶ 7). Petitioner asserts that “in the ’658 patent, the people view that is ultimately shown to the user entails not only the initial pressing of ‘People’ (1401) . . . but further the additional selection of a desired display order via a drop-down list (1402).” *Id.* (citing Ex. 1001, Fig. 32, 22:59–67; Ex. 1047 ¶ 7)). Thus, according to Petitioner, “even the ’658 patent itself contemplates having intermediate user actions between the first event (*i.e.*, ‘cause’) and the second event (*i.e.*, ‘effect’).” *Id.* at 4 (citing Ex. 1047 ¶ 7).

Petitioner asserts further that “[w]hen asked during deposition about the possibility of having this intermediate drop-down selection, Patent Owner’s expert Dr. Reinman acknowledged that it would be ‘possible’” to have an intermediate user action and that “additional intervening actions by the user, such as scrolling, that must be done by the user to actually view the desired content would not run afoul of the ‘responsive to’ requirement.” Pet. Reply 5 (citing Ex. 1045, 26:23–27:17; 30:19–32:3; 52:3–23; 55:6–56:1; Ex. 1046, 78:3–79:3; Ex. 1047 ¶ 8).

Patent Owner responds by arguing that during his deposition (Ex. 2033) “Dr. Greenspun admitted, ‘responsive to’ does **not** mean ‘subsequent to’” in his response to the question “[d]oes the phrase ‘responsive to’ then **require a cause/effect relationship** between the first event and the second event?” PO Sur-reply 1–2 (citing Ex. 2033, 17:11–25; Ex. 2024, 81:7–20, 92:3–13, 205:9–207). Patent Owner then states that “[t]he parties’ dispute is whether ‘responsive to’ requires a **direct** cause-effect relationship between two events, as Patent Owner proposes, or if it also encompasses an **indirect** cause-effect relationship that allows an infinite number of intervening events, as Petitioner proposes.” *Id.* at 3.

IPR2022-00221  
Patent 10,423,658 B2

During the oral hearing, we questioned the parties about the meaning of “responsive to.” Tr. 24–29, 51. In particular, we asked how to reconcile Patent Owner’s definition of “responsive to” with claim 1’s requirement that all of the scaled replicas of each of the digital photographs and videos in the first set of digital photographs and videos be displayed “responsive to a click or tap” and that all of the scaled replicas of each of the digital photographs and videos in the second set of digital photographs and videos be displayed “responsive to a click or tap” in instances when the first and second sets include more than 150 photographs and videos. *Id.*

In response to our questions, Patent Owner’s representative, Ms. Hayes, contended that

both experts testified that when the claims refer to the views, the claim views, it’s not necessarily what you actually see on the screen. Instead, the view refers to what is delivered by the application to the user interface device. And so, when you read the claims with that context, yes, there will be possibly situations where there are more photos than can be displayed on the actual screen of the device.

Tr. 27:3–8. However, as pointed out by Judge Trock, the claim at issue (claim 1) requires displaying all of the scaled replicas of the photographs and videos in the first or second set of photographs and videos “responsive to a click or tap.” *Id.* at 28:11–13; Ex. 1001, 35:54–36:7. If “responsive to a click or tap” is construed to require a direct cause and effect relationship as Patent Owner proposes without any additional actions, the full scope of the claim 1 is not enabled for large sets of photographs or videos. Thus, Patent Owner’s proposed claim construction would invalidate the claim. We decline to adopt such a claim construction. *Alcon Research, Ltd. v. Apotex Inc.*, 687 F.3d 1362, 1368 (Fed. Cir. 2012).



IPR2022-00221  
 Patent 10,423,658 B2

Further, we do not agree with Patent Owner that Petitioner’s proposed claim construction “allows an infinite number of intervening events.” PO Sur-reply 3. Rather, Petitioner’s position, as supported by Dr. Greenspun’s testimony, is that “a POSITA would have recognized that the term ‘responsive to’ merely requires that the second event happen ‘subsequent to’ the first event based on a combination of user interaction and software implementation.” Pet. Reply 4 (citing Ex. 2022, 42:21–44:22; Ex. 2024, 108:20–109:12; Ex. 1047 ¶ 7). We credit Dr. Greenspun’s testimony regarding claim construction for “responsive to a click or tap” and adopt this definition as our own. Ex. 1047 ¶¶ 7–11.

3. *“Displaying the People View Including Displaying: . . . a Name Associated With the First Person . . . and a Name Associated With the Second Person”*

Patent Owner contends that “[t]he plain and ordinary meaning of the word ‘and’ in claim 5 requires that ‘the displaying the people view’ must include displaying both a ‘name associated with the first person . . . **and** . . . a name associated with the second person’ at the same time ‘responsive to’ a click or tap of the ‘people selectable element.’” PO Resp. 25–26 (citing Ex. 2023 ¶¶ 131–132). In support of this contention, Patent Owner argues that “a construction where only one name is displayed at a given time renders the express language of claim 5 (i.e., the word ‘and . . . a name associated with the second person’) ‘void, meaningless, or superfluous.’” PO Resp. 26 (citing *Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1288 n.10 (Fed. Cir. 2017)). Patent Owner further argues that “a construction allowing the second name to be displayed ‘at some unspecified time’ after the first name conflicts with a purpose of the invention” and that the claim “requires that both names are displayed ‘responsive to a click or tap of the

IPR2022-00221  
 Patent 10,423,658 B2

people selectable element.”” *Id.* at 27 (citing *Trading Techs. Int’l, Inc. v. eSpeed, Inc.*, 595 F.3d 1340, 1354 (Fed. Cir. 2010); *id.* at 17–25).

Noting that “[t]he only specification support cited by Patent Owner for this overly narrow interpretation appears to be the ’658 patent’s FIG. 32 and its accompanying description,” Petitioner replies that “[a]lthough the example provided in FIG. 32 seems to show both a first name and a second name at the same time, nothing in the ’658 patent requires both names to be visible together to the user at all times.” Pet. Reply 8 (citing PO Resp. 28, Ex. 1047 ¶ 12). Petitioner asserts that “the claim language at issue merely recites displaying a ‘view’ (*e.g.*, ‘people view,’ ‘album view,’ etc.) responsive to a click or tap” and that it “does not state that everything associated with the view is displayed responsive to the click or tap – it states that the **view** is displayed responsive to the click or tap and that the view **includes** various pieces of information.” *Id.* at 9.

Patent Owner responds that claim 5 requires “displaying at least two pairs of thumbnails and names simultaneously.” PO Sur-reply 7. In support of its position, Patent Owner reiterates the arguments presented in its Response. *Id.* at 8–11.

We agree with Petitioner that nothing in the ’658 Patent requires the simultaneous display of the name of the first person and the name of the second person. Pet. Reply 8. Claim 5 requires displaying these names, but does not specify when the names must be displayed. Further, we do not agree with Patent Owner that “a construction where only one name is displayed at a given time renders the express language of claim 5 (*i.e.*, the word ‘and .... a name associated with the second person’) ‘void, meaningless, or superfluous,’” because without the limitations pertaining to

IPR2022-00221  
Patent 10,423,658 B2

the second person, claim 5 would only require displaying the name of one person. PO Resp. 26. Thus, the claim language has meaning even if it is not interpreted to require simultaneous display of the first and second names.

For these reasons, we determine that the claim language at issue does not require that the first and second names be displayed at the same time.

4. *“The displaying the album view including displaying: . . . a first album name . . . and . . . a second album name”*

Patent Owner contends that “[t]he plain and ordinary meaning of the word ‘and’ in claim 13 requires that ‘displaying the album view’ must include displaying both the ‘first album name’ **and** the ‘second album name’ in the same view at the same time responsive to a click or tap of the album selectable element.” PO Resp. 29 (citing Ex. 2023 ¶ 157). Patent Owner contends that

Similar to the names in the “people view,” a construction that allows for the “second album name” to be displayed some unspecified time after displaying the “first album name” conflicts with the plain claim language, including the requirement that the album names are “displayed adjacent to” a corresponding album selectable thumbnail image.

*Id.* (citing Ex. 2023 ¶ 157; *id.* at 25–28). Patent Owner contends further that “[s]uch a construction would also conflict with a purpose of the invention; namely, saving a user time and displaying significant information.” *Id.* (citing Ex. 1001, 13:19–23; Ex. 2023 ¶¶ 160–161).

Petitioner replies that Patent Owner’s contentions are similar to its contentions regarding the “people view.” Pet. Reply. 11. Petitioner asserts that “[f]or similar reasons . . . claim 13 does not require simultaneous display of the first and second album names.” Pet. Reply 11 (citing Ex. 1047 ¶ 15).

IPR2022-00221  
 Patent 10,423,658 B2

We agree with Petitioner that Patent Owner's contentions regarding claim 13 are similar to its contentions regarding claim 5, and that these contentions are similarly flawed for the reasons discussed above, and we determine that the claim language at issue does not require that the first and second album names be displayed at the same time.

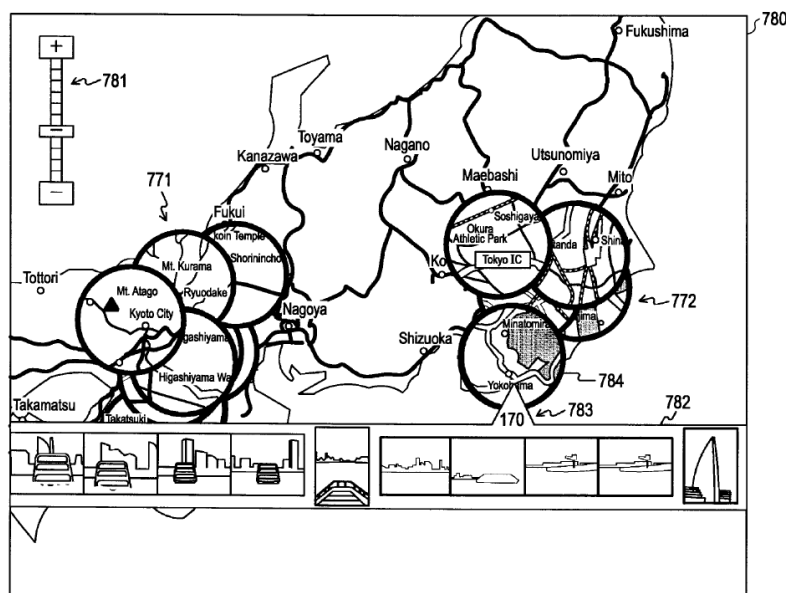
#### *D. Relevant Prior Art*

##### *1. Okamura*

Okamura is a U.S. Patent Publication titled, "Information Processing Apparatus, Information Processing Method, and Program," published May 26, 2011. Ex. 1005, codes (43), (54). Okamura describes an information processing apparatus which displays contents such as image files. Ex. 1005 ¶ 2. Okamura's information processing apparatus also allows managing of contents such as recorded image files. *Id.* ¶ 91.

Figure 41, reproduced below, shows an embodiment of a display of Okamura that includes a map view screen.

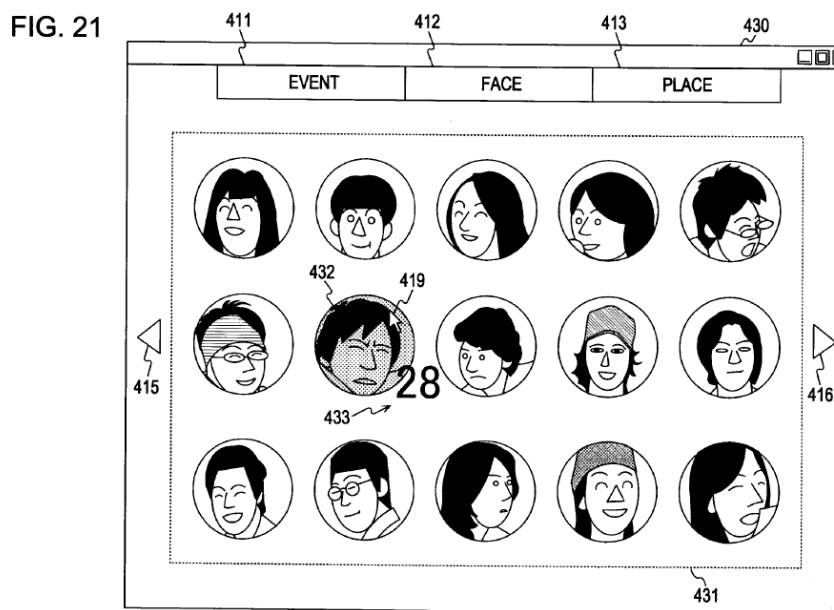
FIG. 41



IPR2022-00221  
 Patent 10,423,658 B2

*Id.* at Fig. 41, ¶ 61. As shown in Figure 41, map view screen 780 displays a map including cluster map groups 771, 772. *Id.* A user can change the scale of map view screen 780 and can select a desired cluster map such that a listing of its contents is displayed in content listing display area 782. *Id.* at Fig. 41, ¶¶ 355–356. For example, cluster map 784 within cluster map group 772 is selected to show it has 170 contents that can be displayed in content listing display area 782. *Id.* at Fig. 41, ¶ 356. Overlapping cluster maps are spread out in accordance with a predetermined condition such that “graphical correspondence between contents can be intuitively grasped.” *Id.* at Fig. 41, ¶ 358.

Figure 21, reproduced below, shows another embodiment of a display of Okamura that includes an index screen.



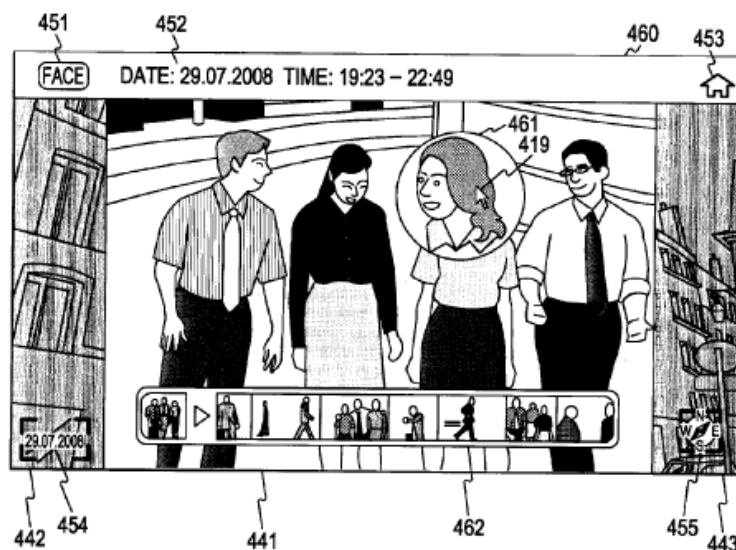
*Id.* at Fig. 21, ¶ 41. As shown in Figure 21, an index screen displays indexed images generated on the basis of face information. *Id.* at Fig. 21, ¶ 234. The index screen includes cursor 419 for pointing to an object of instruction or operation on the screen. *Id.* at Fig. 21, ¶ 234. The index

IPR2022-00221  
 Patent 10,423,658 B2

screen includes “EVENT” tab 411, “FACE” tab 412, and “PLACE” tab 413 that are used for displaying a different index screen. *Id.* at Fig. 21, ¶¶ 235–236. Okamura discloses that in the face cluster image display area 431 shown in Figure 21, images representing face clusters are displayed such that “an image representing a face cluster, for example, a thumbnail image of each of faces included in contents belonging to the face cluster can be used” by extracting faces and contents belonging to the face cluster. *Id.* at Fig. 21, ¶ 246. For example, thumbnail image 432 in face cluster image display area 431 has 28 contents indicated for its pieces of information 433, that can be accessed by a user. *Id.* at Fig. 21, ¶ 247.

Figure 24, reproduced below, shows another embodiment of a display of Okamura that includes a content playback screen.

FIG. 24



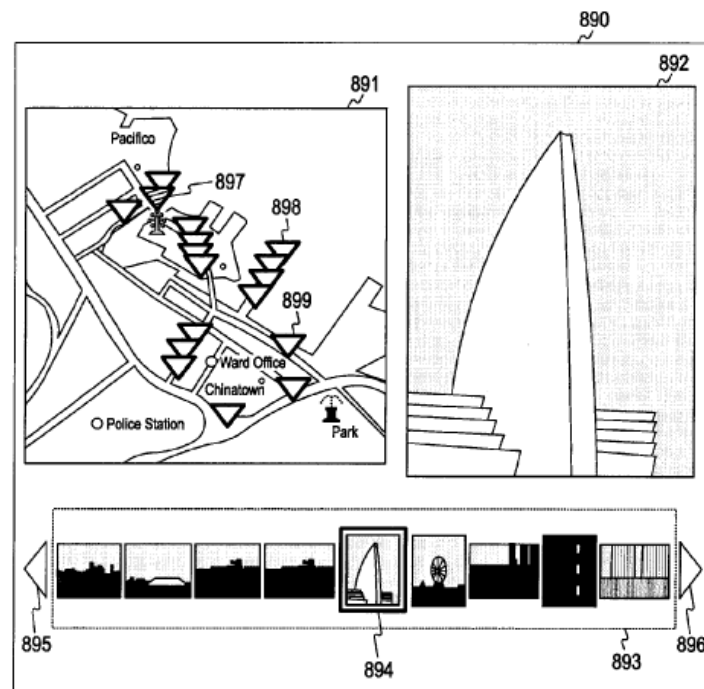
*Id.* at Fig. 24, ¶ 44. As shown in Figure 24, content playback screen 460 can be displayed “when the mouse is placed over the face portion” in another content playback screen. *Id.* at Fig. 24, ¶ 261. Content playback screen 460

IPR2022-00221  
 Patent 10,423,658 B2

includes image 461 of the vicinity of the face displayed in magnified form and content listing display area 462 in content display area 411. *Id.* at Fig. 24, ¶ 261. Content listing display area 462 shows a listing of contents included in the face cluster (from Figure 21 for example) and also thumbnail images of the content. *Id.* at Fig. 24, ¶ 261.

Figure 50, reproduced below, shows another embodiment of a display of Okamura that includes a play view screen.

FIG. 50



*Id.* at Fig. 50, ¶ 70. As shown in Figure 50, play view screen 890 shows “images related to a cluster corresponding to the cluster map on which a determining operation has been made are displayed,” including “a listing of contents belonging to the cluster, a content’s magnified image, and the like.” *Id.* at Fig. 50, ¶ 440. Play view screen 890 includes map display area 891, magnified image display area 892, and content listing display area 893. *Id.*

IPR2022-00221  
Patent 10,423,658 B2

at Fig. 50, ¶ 441. Map display area 891 includes a map related to the corresponding cluster with marks indicating the generated positions of contents belonging to the corresponding cluster. *Id.* at Fig. 50, ¶ 442. Content listing display area 893 shows a listing of contents belonging to the corresponding cluster which are displayed as thumbnails. *Id.* at Fig. 50, ¶ 444. Magnified image display area 892 includes an image corresponding to the content selected from box 894 of the content listing display area 893, which is displayed in magnified form. *Id.* at Fig. 50, ¶ 443.

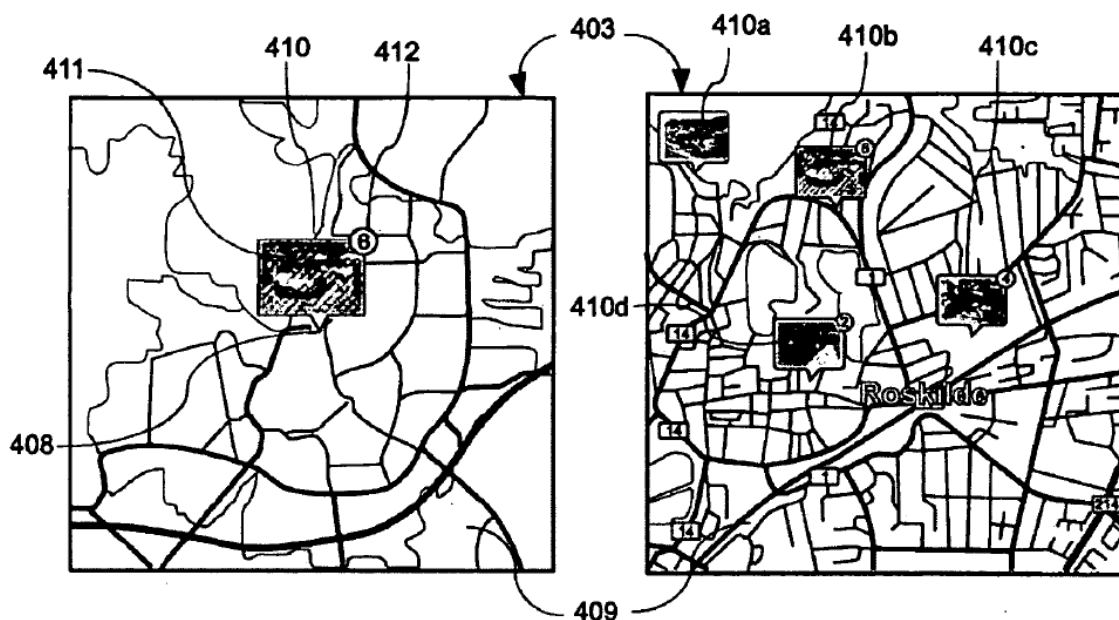
## 2. *Belitz (Ex. 1006)*

*Belitz* is a U.S. Patent Publication that published on March 4, 2010, more than one year before the earliest priority date of the '658 Patent. Ex. 1001, code (22), (60); Ex. 1006, code (43).

*Belitz* relates to a “user interface . . . configured to display a map and to display at least one marked location on said map.” Ex. 1006, code (57). By way of background, *Belitz* explains that “[i]t is common to mark special locations on a map by associating a graphical object with that location. Examples of such locations are service points, restaurants, tourist attractions, visited places etc[.] and examples of graphical objects are photographs taken at such a location.” *Id.* ¶ 2. *Belitz* further explains “[i]f many locations are located close to one another they overlap and the view of the associated images become cluttered and it is difficult to discern between the various objects and the user is not provided with a good view of what location is associated with what.” *Id.* *Belitz* presents a user interface attempting to address those concerns. *Id.* ¶ 5. Figures 4a and 4b, reproduced below, show screenshots of the user interface. *Id.* ¶ 51, 55.



IPR2022-00221  
 Patent 10,423,658 B2



**Fig. 4a**

**Fig. 4b**

As shown in Figure 4a, a “map 409 is displayed of a town called Roskilde. A location 408 is marked by a graphical object 410.” *Id.* ¶ 51. “[G]raphical object 410 has a visual representation 411 which in this embodiment is a photograph that is associated with the location.” *Id.* ¶ 52. Furthermore, “graphical object 410 carries a number indicator 412 which presents a viewer with a number. The number indicates how many graphical objects 410 are associated with that location and are stacked into one graphical object 410.” *Id.* ¶ 54. Furthermore, “graphical objects stacked in the displayed graphical object or graphical group object 410 . . . can be associated with other locations that are in close proximity to the marked location 408” because “if the graphical objects associated with each location were to be displayed separately they would overlap which would clutter the view and be confusing to a user.” *Id.*

Figure 4b shows map 408 having been “zoomed in showing the area in greater detail.” *Id.* ¶ 55. At this zoom level, graphical object 410 is “split

IPR2022-00221  
 Patent 10,423,658 B2

up into 4 graphical objects 410a, 410b, 410c and 410d” because the display of those graphical objects would not overlap. *Id.* Those graphical objects themselves also consist of some number of graphical objects. *Id.*

When a graphical object, e.g., graphical object 410, 410a, 410b, 410c, or 410d, is selected, a popup window is displayed over the graphical object. *Id.* ¶ 60. Figure 4c, reproduced below, is a screenshot showing the user interface after the selection of graphical object 410c. *Id.*

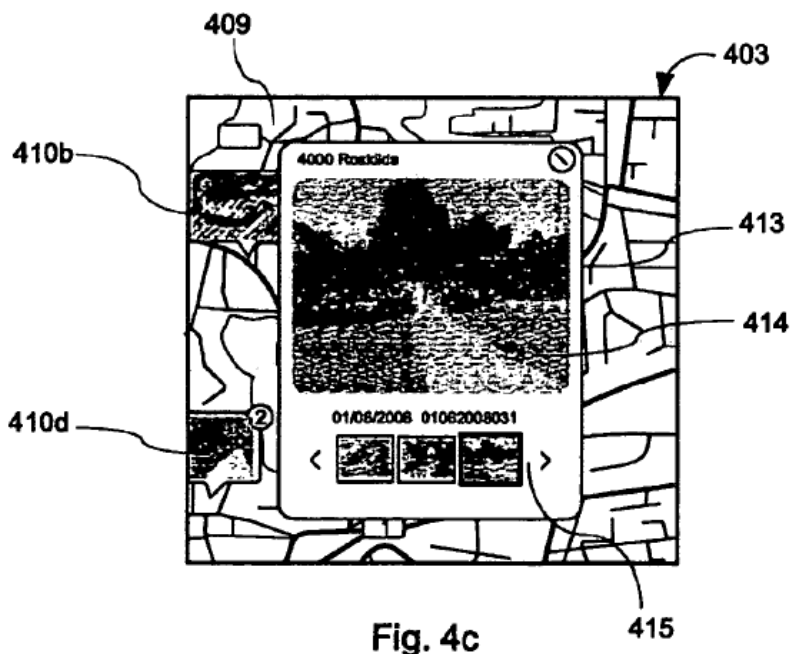


Fig. 4c

As shown in Figure 4c, the “popup window shows at least some of the visual representations 411 of the graphical object 410c.” “One 414 of the visual representations 411 or images as they are in this embodiment is shown in a larger size than the others which are shown in a list 415.” *Id.* In some embodiments, “graphical objects are photographs that are associated with the location where they were taken. The visual representations are thumbnails of the photographs.” *Id.* ¶ 62.

IPR2022-00221  
Patent 10,423,658 B2

3. *Yee (Ex. 1041)*

Yee is a U.S. Patent Application Publication that published on August 20, 2009, more than one year before the earliest priority date of the '658 Patent. Ex. 1001, code (12), (45).

Yee relates to information-retrieving systems that allow a user to traverse digital records based on multiple dimensional attributes. Ex. 1041 ¶ 1.

“One embodiment of the present invention provides a system that facilitates traversing digital records with dimensional attributes. The system stores a number of digital records and associates a respective digital record with a number of attributes. A respective attribute can be specified in a number of levels of abstraction.” Ex. 1041 ¶ 5. “The system allows a user to control a presentation of the stored digital records based on . . . attributes” such as “Place,” “People,” or “Event.” *Id.* ¶¶ 5, 49. “The user can set one or more criteria for the attributes of the digital records to be presented.” *Id.* ¶ 5. The user can “specify the value of at least one fixed attribute of the digital records to be presented, changing at least one non-fixed attribute of the digital records to be presented, and/or specifying a level of abstraction for the fixed and/or non-fixed attribute of the digital records to be presented.” *Id.* “The system then presents a set of digital records to the user based on the attribute criteria set by the user.” *Id.* “In a variation on this embodiment, a respective digital record comprises one or more of a photograph, a piece of video, a piece of audio, and a piece of text.” *Id.* at 6.

IPR2022-00221  
Patent 10,423,658 B2

*E. Ground 1 - Obviousness of Claims 1–15 Based on the Combined Teachings of Okamura and Belitz*

Petitioner asserts that claims 1–15 are unpatentable over the combination of Okamura and Belitz under 35 U.S.C. § 103(a). Pet. 21–103. Patent Owner disputes Petitioner’s assertions. PO Resp. 30–90.

*1. Independent Claim 1*

For each limitation of claim 1, Petitioner asserts that Okamura alone or in combination with Belitz meets that limitation. Pet. 34–64. Petitioner also provides the testimony of Dr. Greenspun in support of its position with respect to the limitations of claim 1. Ex. 1003 ¶¶ 99–148. Patent Owner does not contest Petitioner’s findings for every limitation. For the uncontested limitations, we have considered Petitioner’s evidence and arguments with respect to these limitations, including the relevant testimony of Dr. Greenspun and Dr. Reinman. For the uncontested limitations of claim 1, we determine that Petitioner has shown by a preponderance of the evidence that the combined teachings of Okamura and Belitz meet the uncontested limitations. Accordingly, we focus our discussion of this challenge on the contested limitations and Patent Owner’s arguments.

*a) Displaying of First and Second Location Selectable Thumbnails As Required by Limitations [1b]–[1g]*

Petitioner asserts that “Okamura discloses a map view that displays cluster maps on a map for a user ‘to intuitively grasp the geographical correspondence between the cluster maps.’” Pet. 38 (citing Ex. 1005 ¶ 312). Petitioner asserts that “Okamura’s map view screen is ‘a display screen that displays cluster maps in an overlaid manner on a map, and corresponds to the map view screen 780 shown in FIG. 41.’” *Id.* (citing Ex. 1005 ¶ 431;

IPR2022-00221  
 Patent 10,423,658 B2

Ex. 1003 ¶ 107). In addition, Petitioner asserts that Okamura’s “*clusters* a[re] ‘thumbnail’ images of a portion of a map” and “to the extent that the location-based *clusters* in Okamura’s map view are not ‘thumbnail image[s]’ as claimed, a POSITA would have been motivated to combine Okamura and Belitz such that Okamura’s map view displays selectable thumbnail images as disclosed in Belitz to obtain additional benefits.” *Id.* at 22–23 (citing Ex. 1005 ¶¶ 135, 221–223, 229–231; Ex. 1003 ¶ 86) (emphasis added).

Patent Owner contends that “Petitioner proposes three combinations of Okamura and Belitz” and argues each combination separately. PO Resp. 30–60. We discuss each argument below.

#### (1) *First Proposed Combination*

For its first proposed combination Petitioner asserts that a person of ordinary skill in the art would have replaced the cluster map group 771 shown in Okamura Fig. 41 with Belitz’s graphical objects 410a–d. *See* Pet. 22–26. Patent Owner contends that replacing Okamura’s cluster maps with Belitz’s graphical objects “would entirely defeat Okamura’s stated purpose of using cluster maps.” *Id.* at 33 (citing Ex. 2023 ¶ 178; *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016); *Google LLC f/k/a Google Inc. v. Singular Computing LLC*, IPR2021-00155, Paper 62 at 74 (PTAB May 23, 2022)). In support of this position, Patent Owner quotes Okamura’s statements that “a cluster map is a map” and that “[O]n the basis of positional information associated with each of contents belonging to a cluster, an area corresponding to the cluster can be identified, and a map covering this identified area can be used as a map (cluster map) corresponding to the cluster.” *Id.* at 33–34 (quoting Ex. 1005 ¶¶ 213, 331; citing Ex. 2023 ¶ 179; Ex. 1024, 48:8–15).

IPR2022-00221  
 Patent 10,423,658 B2

Patent Owner contends further that “[u]nlike Okamura’s cluster maps, none of Belitz’s thumbnails 410a-410d convey geographical information to enable them to be used as a map” and that “[r]eplacing Okamura’s cluster maps with Belitz’s thumbnails 410a-410d entirely eliminates all cluster map information (including the textual location labels) and the cluster map’s utility in relation to the background map.” PO Resp. 36 (citing Ex. 2024, 49:22–50:9, 181:16–182:6; Ex. 2022, 74:15–75:6, 80:9–81:19; Ex. 2023 ¶¶ 187–188).

In addition, Patent Owner contends that “a POSITA reviewing Okamura would be discouraged from turning to Belitz because the first combination carries the same disadvantages as the ‘related art’ references (Fujiwara and Takakura) associated with presenting a background map with generic markers.” PO Resp. 38 (citing Ex. 1005 ¶¶ 4–10; Ex. 2002; Ex. 2019; Ex. 2033 ¶ 192). Patent Owner contends that Okamura’s discussion of these disadvantages amounts to a teaching away from the proposed combination. *See id.* at 39–44.

Patent Owner also contends that “Petitioner’s first combination also would not have been obvious because it conflicts with Belitz’s stated objectives.” PO Resp. 44 (citing Ex. 2023 ¶ 207). Specifically, Patent Owner asserts that “[i]n the first combination, at least some of Belitz’s thumbnails overlap on the map” which is contrary to Belitz’s teaching “that the thumbnails should not touch or even be close to one another because otherwise this ‘would clutter the view and be confusing to a user.’” *Id.* at 44–45 (citing Ex. 1006 ¶¶ 54–58; Ex. 2023 ¶ 208).

Turning to Petitioner’s reasoning in support of the proposed combination, Patent Owner contends that Petitioner’s alleged “motivations”

IPR2022-00221  
 Patent 10,423,658 B2

lack merit. PO Resp. 45. Specifically, Patent Owner contends that “[a] POSITA reviewing Okamura would have understood that replacing cluster maps with Belitz’s thumbnails would have undermined” the goal of improving the user experience because Okamura’s cluster maps convey far more information regarding a particular location than Belitz’s thumbnail images. *Id.* at 46 (citing Ex. 2023 ¶ 211). Patent Owner contends further that “to the extent this alleged ‘motivation’ relates to displaying an image associated with a particular location to provide ‘a good view of what location is associated with what,’ Okamura’s Fig. 41 embodiment already achieves that objective” because “[i]n Okamura, when cluster map 784 is selected, a ‘listing of contents [images] belonging to the selected cluster map is displayed in a content listing display area 782.’” *Id.* at 47–48 (citing Pet. 24; Ex. 2023 ¶¶ 209–210, 216–217; Ex. 1005 ¶ 356, Fig. 41; Ex. 2024, 67:22–68:20).

Patent Owner further contends that Petitioners reasoning that “[i]t would have been obvious to a POSITA to incorporate Belitz’s thumbnail images . . . to provide added functionality that allows a user to preview pictures associated with a given location” is flawed because “Okamura ***already*** allows one to preview pictures for a given location via the content listing area 782 (a/k/a ‘filmstrip’) of FIG. 41.” PO Resp. 48 (quoting Pet. 24–25; citing Ex. 1005 ¶ 356; Ex. 2023 ¶¶ 218–220; Ex. 2024, 67:22–68:20).

In addition, Patent Owner argues that Belitz’s thumbnail images are not functionally equivalent to or known, predictable alternatives to Okamura’s cluster maps because Okamura and Belitz both teach that

IPR2022-00221  
 Patent 10,423,658 B2

cluttering, as seen in Picasa and Panoramio,<sup>9</sup> is undesirable and can confuse the user. PO Resp. 49–50 (citing Ex. 1005 ¶¶ 312, 324–325; Ex. 1006 ¶¶ 54–57; Ex. 2023 ¶ 26).

Finally, Patent Owner contends that “[a] POSITA would not have understood that Okamura’s Fig. 41 embodiment is used with the index screens embodiment” because “Okamura *does* not disclose transitioning from Fig. 41 to any of the index screens in Figs. 18–21.” PO Resp. 52 (citing Ex. 2023 ¶¶ 230–232; Ex. 1005, Fig. 49, ¶¶ 429–438).

Petitioner replies that even if it were true that none of Belitz’s thumbnails convey geographical information, “a POSITA would still have been motivated to combine Okamura and Belitz to obtain ‘additional benefits’” such as “better managing digital content” and an enhanced user experience “by providing ‘a good view of what location is associated with what.’” Pet. Reply 12 (citing Ex. 1003 ¶¶ 84–98; Pet. 22–30; Ex. 1005 ¶ 91; Ex. 1006 ¶ 2). Petitioner replies further that

Even if the benefits obtained by incorporating Belitz’s thumbnails into Okamura were to come at the expense of some other benefit offered by Okamura, a POSITA pursuing the combination would have nevertheless been capable of weighing potential benefits associated with each, for instance recognizing that the benefits of viewing location-specific thumbnail images may be achieved in one instance and those of viewing location-specific cluster maps may be achieved in another.

*Id.* at 13 (citing *Winner Int’l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000); Ex. 1047 ¶¶ 17–18).

---

<sup>9</sup> Shankland (Ex. 1022), which includes a photo of “Picasa,” and Panoramio (Ex. 1023) are of record in this proceeding, but not relied upon as the basis of this challenge.



IPR2022-00221  
Patent 10,423,658 B2

Replying to Patent Owner’s contention that the proposed combination suffers from the same disadvantages as Fujiwara and Takakura (PO Resp. 38–44), Petitioner asserts that in Fujiwara and Takakura “it can be difficult to grasp the geographical correspondence between digital files because their thumbnails are not placed directly on the map.” Pet. Reply 14 (citing Ex. 1047 ¶ 20; Ex. 2002, Fig. 12; Ex. 2019, Fig. 1). In contrast, according to Petitioner, “it is **not** difficult to grasp the geographical correspondence between digital files in Belitz . . . by virtue of the location of the thumbnails on the map.” *Id.* (citing Ex. 1047 ¶ 20; Ex. 1006, Figs. 4a–4b). Thus, according to Petitioner, “the alleged problems with Fujiwara and Takakura that ‘may make it difficult to grasp the geographical correspondence’ of their images are not manifested in the same manner in Belitz.” *Id.* (citing Ex. 1047 ¶¶ 20–21; PO Resp. 39).

Replying to Patent Owner’s contention that “the Okamura-Belitz combination somehow conflicts with Belitz’s stated objectives of reducing clutter,” Petitioner asserts that Patent Owner relied on “a cropped reproduction of an illustration originally provided by Dr. Greenspun” and that “a portion of Dr. Greenspun’s illustration that was **not** shown by Patent Owner clearly shows that the combination can be achieved without any overlap.” Pet. Reply 14–15 (citing PO Resp. 44–45).

Turning to Patent Owner’s contentions regarding its reasoning in support of the proposed combination, Petitioner replies that Patent Owner ignores “the careful explanation previously provided by Dr. Greenspun.” Pet. Reply 16 (citing PO Resp. 45–48). Specifically, Petitioner asserts that Patent Owner ignores Dr. Greenspun’s explanation “in his first declaration that incorporating the thumbnails of Belitz into Okamura would have

IPR2022-00221  
 Patent 10,423,658 B2

resulted in the ‘added functionality that allows a user to preview pictures associated with a given location’ and do so in a manner that allows the user to more ‘clearly see the associations.’” *Id.* (citing Ex. 1003 ¶¶ 88–89). Thus, according to Petitioner, “instead of having to click on individual clusters as in Okamura to ascertain which pictures are associated with which locations, Belitz provides a way for Okamura to provide such information all at once for multiple locations on the map.” *Id.* (citing Ex. 1047 ¶¶ 22–24). Petitioner asserts further that “the incorporation of Belitz’s thumbnails allows the user to quickly associate multiple preview pictures with multiple locations on the map without having to individually navigate through each of the clusters” such that “the combination of Okamura and Belitz helps improve user experience and overall content awareness by providing the user with a preview of the digital files associated with multiple corresponding locations.” *Id.* (citing Ex. 1047 ¶ 25). Petitioner asserts that “[i]n short, instead of changing the ‘hallmark aspects of either of these references’ as Patent Owner contends, the proposed combination of Okamura and Belitz provides a known and predictable alternative to displaying and managing digital content in a manner that can help improve user experience.” *Id.* at 16–17 (citing Ex. 1003 ¶ 89; Ex. 1047 ¶ 25).

Replying to Patent Owner’s argument that “Petitioner has ‘failed to demonstrate that the first combination (based on Okamura’s second embodiment) would have been used with Okamura’s FACE index screen 410,’” Petitioner asserts that Dr. Greenspun “explained in great detail how, *inter alia*, ‘the use of Okamura’s map view from FIG. 41 in conjunction with Okamura’s face view from FIG. 21 . . . is appropriate and obvious” and that “[t]o the extent Okamura does not explicitly disclose this transition, a

IPR2022-00221  
Patent 10,423,658 B2

POSITA would have certainly found it obvious.” Pet. Reply 17 (citing PO Resp. 52; Ex. 1003 ¶¶ 96–98, Ex. 1047 ¶ 26).

Patent Owner responds by reiterating its arguments that Belitz has the same disadvantages as Fujiwara and Takakura, that Okamura and Belitz are not functionally equivalent, and that the proposed combination conflicts with Belitz’s objectives. PO Sur-reply 23–29.

Having considered the full record in this proceeding, we determine that Petitioner has shown by a preponderance of the evidence that claim 1 is unpatentable over the combined teachings of Okamura and Belitz as explained in Petitioner’s first proposed combination. The crux of Patent Owner’s arguments with respect to the first proposed combination is that the resulting combination would not be as good as Okamura without modification in that it would obviate some of Okamura’s features. This argument, however, discounts the advantages gained as a result of the combination. Further, it over simplifies the obviousness analysis.

“The fact that the motivating benefit comes at the expense of another benefit, however, should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another. Instead, the benefits, both lost and gained, should be weighed against one another.” *Winner Int’l*, 202 F.3d at 1349 n.8. Patent Owner contends that the proposed combination eliminates the “map” features of Okamura’s clusters (i.e., its depiction of buildings, roads, and the like). PO Resp. 33–34. Patent Owner contends further that Belitz’s thumbnails do not convey geographical information. *Id.* at 36. We do not agree that Belitz’s thumbnails do not convey geographical information. Rather, we credit Dr. Reinman’s

IPR2022-00221  
Patent 10,423,658 B2

testimony that Belitz “shows the association of at least some pictures with the geographic location on the map.” Ex. 1045, 107:10–22.

Further, even if we assume Patent Owner is correct that the proposed combination eliminates Okamura’s “map” features, that is not the end of the analysis. Petitioner asserts that the proposed combination adds functionality in that it allows a user to preview pictures associated with a given location without having to click on individual clusters and that it allows users to preview pictures for multiple locations on the map. Pet. Reply 16. We find that this added functionality provided by the use of Belitz’s thumbnails outweighs the potential loss of any map information provided by Okamura’s cluster maps.

In addition, we agree with Petitioner that “Belitz’s thumbnail images displayed on the interactive map are functionally equivalent to Okamura’s location-based clusters” in that “(1) both Belitz’s thumbnail images and Okamura’s clusters are associated with a given location, (2) both are displayed on the interactive map, and (3) both are dynamically generated/modified based on user interaction including zooming in/out on the map.” Pet. 24. We also agree with Petitioner that the use of thumbnails on interactive maps was well known at the time of the invention and that it would have been obvious to one of ordinary skill in the art to substitute Belitz’s thumbnails for Okamura’s cluster maps. *Id.* at 25.

Moreover, we do not agree with Patent Owner that Belitz’s thumbnails are subject to the same disadvantages as Fujiwara and Takakura, that present a background map with generic markers, because Belitz’s thumbnails are not generic. PO Resp. 38. Belitz’s thumbnails are photographs associated with a location. Ex. 1006 ¶ 52. We also do not

IPR2022-00221  
Patent 10,423,658 B2

agree with Patent Owner that the proposed combination would result in some overlap on the map as we credit Dr. Greenspun’s full testimony demonstrating how the combination can be achieved without overlap. PO Resp. 44; Ex. 1003 ¶ 86; Ex. 1047 ¶ 23).

Turning to Petitioner’s reasoning in support of the proposed combination, we do not agree with Patent Owner that Petitioner’s “motivations” lack merit. PO Resp. 45. For the reasons discussed above, we determine that Petitioner has shown by a preponderance of evidence that the proposed combination adds functionality that improves the user experience which outweighs any potential loss of functionality due to elimination of some geographic information.

We do not agree with Patent Owner’s argument that “Petitioner’s combination results in no ‘added [preview] functionality’ because Okamura already has it.” PO Resp. 48–49 (citing *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1369 (Fed. Cir. 2012)). We credit Dr. Greenspun’s testimony that “incorporating the thumbnails of Belitz into Okamura would have resulted in the ‘added functionality that allows a user to preview pictures associated with a given location’ and would have been done so in a manner that allows the user to more ‘clearly see the associations.’” Ex. 1047 ¶ 24 (citing Ex. 1003 ¶¶ 88–89).

We also do not agree with Patent Owner that Belitz’s thumbnails are not functionally equivalent to Okamura’s cluster maps. For the reasons discussed above, we determine that Petitioner has demonstrated by a preponderance of the evidence that it would have been obvious to a person of ordinary skill in the art to replace Okamura’s cluster maps with Belitz’s thumbnails.

IPR2022-00221  
Patent 10,423,658 B2

For these reasons, we determine that Petitioner has shown by a preponderance of the evidence that the combined teachings of Okamura and Belitz as proposed in Petitioner’s first combination would have rendered displaying of first and second location selectable thumbnails as required by limitations [1b]–[1g] obvious to one of ordinary skill in the art at the time of the invention.

(2) *Second Proposed Combination*

Petitioner’s second proposed combination, involves replacing ‘Okamura’s map view screen shown in FIG. 41 with Belitz’s geographic map view.’” *See* Pet. 26–27, 31–33. Patent Owner asserts further that “[w]hile the second combination places thumbnail images on Belitz’s map rather than Okamura’s background map, the second proposed combination nevertheless replaces Okamura’s cluster maps with Belitz’s thumbnail images.” *Id.* at 54. Thus, according to Patent Owner, [t]his combination carries the same deficiencies as Petitioner’s first combination because the second combination proposes replacing cluster maps with thumbnail images that are not maps.” *Id.* (citing *id.* at 31–53; Ex. 2023 ¶ 235).

Patent Owner contends further that “the second combination carries additional disadvantages that would have led a POSITA away from the combination.” PO Resp. 55. According to Patent Owner, “the second combination proposes replacing displaying multiple images corresponding to a location (e.g. content listing display area 782) with a single image (e.g. a Belitz thumbnail).” *Id.*

In addition, Patent Owner contends that “Belitz’s popup window feature obscures far more of the underlying map 409 than the content listing area 782 in Okamura” such that “[i]ncorporating this obscuring pop-up

IPR2022-00221  
Patent 10,423,658 B2

window—rather than Okamura’s content listing area 782 at the bottom of the screen—would not be desirable to a POSITA because it would limit the amount of information that can be conveyed at a given time.” PO Resp. 55–56 (citing Ex. 2023 ¶¶ 238–239). Patent Owner also contends that “much of the information shown in FIG. 41 of Okamura would be lost if it were displayed according to Belitz.” *Id.* at 56 (citing Ex. 2023 ¶ 240).

Petitioner replies that Patent Owner attempts to exaggerate the alleged loss of geographical information as a result of the proposed combination by providing an inaccurate illustration including “a conspicuously large and opaque border around Belitz’s thumbnail images.” Pet. Reply 18. Petitioner replies further that “even if such a border were to be originally present, both Dr. Reinman and Dr. Greenspun agree that reducing clutter through simple design changes, which would include minimizing any obtrusive borders, would have been well-known to a POSITA.” *Id.* at 19 (citing Exc. 1045, 99:3–100:18; Ex. 1047 ¶ 29). In addition, Petitioner replies that “the second combination can improve user experience and content awareness by providing the user with a preview of the digital files associated with the corresponding location.” *Id.* (citing Ex. 1003 ¶ 91).

Patent Owner responds that Petitioner does not dispute that the second combination eliminates the entirety of Okamura’s content listing display area 782. PO Sur-reply 28. Patent Owner also reiterates its argument that in the second proposed combination Okamura’s cluster map’s geographic information would be entirely lost. *Id.* at 29.

Although, we agree with Patent Owner, that Petitioner does not dispute that in its second combination Okamura’s cluster maps and their associated geographic information would be lost, we do not see how this

IPR2022-00221  
Patent 10,423,658 B2

observation renders the proposed combination untenable. Petitioner has shown how the proposed combination meets limitations [1b]–[1g] of claim 1. Pet. 26–28, 37–56. To the extent that Patent Owner’s arguments regarding the Petitioner’s first proposed combination apply to its second proposed combination, those arguments are unconvincing for the reasons discussed above. In particular, we determine that the benefits of “better managing digital content” and an enhanced user experience “by providing ‘a good view of what location is associated with what’” outweigh any loss of geographical information. *See* Pet. 22–30.

For these reasons, we determine that Petitioner has shown by a preponderance of the evidence that the combined teachings of Okamura and Belitz as combined in Petitioner’s second combination would have rendered displaying of first and second location selectable thumbnails as required by limitations [1b]–[1g] obvious to one of ordinary skill in the art at the time of the invention.

### (3) *Third Proposed Combination*

Petitioner’s third proposed combination replaces a 3x5 matrix of cluster maps in FIG. 18 of Okamura (the first embodiment) with Belitz’s map.” *See* Pet. 26–28. Patent Owner asserts that “[f]or the same or similar reasons discussed above for the first proposed combination, a POSITA would not replace cluster map display area 414 in FIG. 18 with Belitz’s map because this would completely eliminate Okamura’s cluster maps.” *Id.* (citing *id.* at 31–57; Ex. 2023 ¶¶ 243–244).

Patent Owner contends further that “[i]f the content from Okamura’s FIG. 18 were displayed according to Belitz, the content in Tokyo,



IPR2022-00221  
Patent 10,423,658 B2

represented by separate cluster maps in FIG. 18, would be zoomed out to a scale large enough to capture Japan and Hawaii.” PO Resp. 59 (citing Ex. 2023 ¶¶ 247–248). According to Patent Owner, “[t]his presents the same exact scaling problem Okamura identifies and seeks to eliminate through its cluster maps.” *Id.* at 59–60 (citing Ex. 2024, 60:7–61:20, 62:5–17; Ex. 2023 ¶¶ 245–249). Thus, according to Patent Owner, “Okamura would lead a POSITA away from making the third combination.” *Id.* at 60.

Petitioner replies that “the proposed combination is not a physical extraction of components from Belitz that are grafted onto Okamura.” Pet. Reply 19–20 (citing *In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012); *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985) (*en banc*)). Petitioner asserts that “[a]mong other things, a POSITA, if cognizant of the fact that the Okamura-Belitz combination works less effectively at certain map scales, would know how to adjust the display of Okamura-Belitz depending on the zoom level.” *Id.* at 20 (citing Ex. 1047 ¶ 31). As an example, Petitioner asserts that “for a zoomed-out map, the display shown in Okamura’s FIG. 41 may be preferred,” whereas “[f]or a zoomed-in map, on the other hand, the incorporation of Belitz’s thumbnails may be preferred.” *Id.*

Petitioner has not adequately explained the proposed combination. Petitioner’s reply to Patent Owner’s contentions does not even rely on the proposed combination. Rather, Petitioner appears to rely on a mix of the proposed first and second combinations.

For these reasons, we determine that Petitioner has not demonstrated by a preponderance of the evidence that the combined teachings of Okamura and Belitz as proposed in Petitioner’s third combination would have rendered displaying the first and second location selectable thumbnails as

IPR2022-00221  
Patent 10,423,658 B2

required by limitations [1b]–[1g] obvious to one of ordinary skill in the art at the time of the invention.

*b) Displaying an Application View as Required by Limitation 1[a]*

Petitioner asserts that “Okamura displays an application view (index screen 410) and a plurality of selectable elements (‘an ‘EVENT’ tab 411, a ‘FACE’ tab 412, a ‘PLACE’ tab 413’).” Pet. 36 (citing Ex. 1005 ¶¶ 235–236, Figs. 18–21; Ex. 1003 ¶¶ 103–104). Petitioner asserts further that “‘PLACE’ tab 413 is a location selectable element (‘depressed using the cursor 419 by a user operation on the index screen 420’).” *Id.*

Noting that the Petition also identifies Figure 19 as one example of the claimed “map view,” Patent Owner contends that “Petitioner identifies the content playback screen 410 as corresponding to both the ‘application view’ and the ‘map view’ in claim 1. However, claim 1 requires that the ‘application view’ and ‘map view’ are separate views.” PO Resp. 62 (citing *id.* at 13–17). According to Patent Owner, “[t]he index playback screen 410 is one view – it cannot be both the claimed ‘application view’ and the claimed ‘map view.’” *Id.* (citing Ex. 2023 ¶ 255).

Petitioner replies that “for the reasons discussed above, ‘an application view’ should not be so narrowly construed in this instance.” Pet. Reply 21. Petitioner replies further that “to the extent that an application view must be distinct from a map view, Okamura discloses such an application view as detailed in the Petition.” *Id.* Specifically, Petitioner asserts that “as Dr. Greenspun explained in his original declaration, Okamura discloses an application view that is different from other claimed views in claim 1.” *Id.*

IPR2022-00221  
Patent 10,423,658 B2

As an example, Petitioner asserts that “the index screen 410 portion of Okamura’s interface (which includes selectable tabs 411-413 and an area for content display based on which tab is selected) is different from Okamura’s map view (e.g., the cluster map display area 414 from Okamura’s FIG. 18).” Pet. Reply 21 (citing Pet. 37, 40; Ex. 1003 ¶¶ 104–105; Ex. 1047 ¶ 32). Petitioner asserts further that “a POSITA would have recognized that the index screen 410 and the cluster map display area 414 are different, at least because the index screen 410 includes the plurality of selectable elements.” *Id.* citing (Ex. 1003 ¶ 104; Ex. 1005 ¶¶ 235–236, Figs. 18–21; Ex. 1047 ¶ 33).

Patent Owner responds that “[a] POSITA would consider index screen 410 to be one view – not two.” PO Sur-Reply 32 (citing PO Resp. 62; Ex. 2023 ¶¶ 251–254; Ex. 2024, 36:5–12, 38:8–39:4).

In Section II.C.1, we construed the claim term “application view” in accordance with the discussion of “Application View” in the Specification of the ’658 Patent, and determined that an “application view” is “a customized display of digital tags or files.” Ex. 1001, 9:18–22. Nothing in this definition precludes one “application view” from encompassing another or requires that only one “application view” be visible at a time.

Petitioner identifies Okamura’s index screen 410 as corresponding to the “application view” required by limitation [1a]. Pet. 37–38. The ’658 Patent describes index screen 410 as having tabs such as the “EVENT” tab 411, the “FACE” tab 412, and the “PLACE” tab 413 and a cluster map display area 414, as well as left and right buttons 415 and 416. Ex. 1005 ¶ 235. We agree with Petitioner that Okamura’s index screen 410 meets the definition of ‘Application View’ as that term is used in the ’658 Patent.

IPR2022-00221  
Patent 10,423,658 B2

Petitioner identifies Okamura's map view screen 780 as corresponding to the claimed "map view." Pet. 38. Map view screen 780 also meets the definition of "application view" in that it is a customized display of digital tags or files. Map view screen 780 is clearly different than index screen 410. Thus, in Petitioner's first proposed combination, there is no question that two different "application views" are relied upon to meet the limitations of claim 1 requiring an "application view" and a "map view."

Turning to Petitioner's second proposed combination, Patent Owner is correct that the Petition identifies Okamura's cluster map display area 414 as corresponding to the claimed "map view." Pet. 40. Okamura describes cluster map display area 414 as displaying a listing of marks (cluster maps) representing clusters generated by tree restructuring section 160 and stored in cluster information storing section 240. Ex. 1005 ¶ 237. Cluster map display area 414 also meets the definition of "application view" in that it is a customized display of digital tags or files. Given that there is nothing in the definition of "application view" that precludes another view from being displayed within it, we determine that the second proposed combination also meets the limitations of claim 1 requiring an "application view" and a "map view."

Thus, Petitioner has demonstrated by a preponderance of the evidence that both Okamura's map view screen 780 and its cluster map display area 414 meet the requirement for a "map view" as recited in limitation [1a].

*c) Conclusion Re Claim 1*

Having considered the evidence, testimony, and arguments in the record, we determine that Petitioner has shown that a person of ordinary skill in the art would have combined the teachings of Okamura and Belitz in the

IPR2022-00221  
Patent 10,423,658 B2

manner proposed in this challenge to claim 1. For these reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claim 1 is unpatentable over the combined teachings of Okamura and Belitz.

## 2. *Dependent Claims 2–15*

For each limitation of claims 2–15, Petitioner asserts that Okamura alone or in combination with Belitz meets that limitation. Pet. 65–103. Petitioner also provides the testimony of Dr. Greenspun in support of its position with respect to the limitations of claim 2–15. Ex. 1003 ¶¶ 149–202. Patent Owner contends that “[b]ecause Petitioner has failed to show that any of the references identified in Grounds 1-5 render obvious claim 1, it also fails to meet its burden for dependent claims 2–15 in each of Grounds 1–5.” PO Resp. 62. Patent Owner also presents further arguments for claims 3–5, 7–10, 12, 14, and 15. *Id.* at 63–90.

We disagree with Patent Owner’s argument that Petitioner fails to show that claim 1 is unpatentable for the reasons discussed in Section II.E.1 above. Patent Owner does not present separate arguments for claims 2, 6, and 11. *See generally*, PO Resp. Having considered the evidence, testimony, and arguments in the record for these claims, we determine that Petitioner has shown that a person of ordinary skill in the art would have combined the teachings of Okamura and Belitz in the manner proposed in the challenge to claims 2, 6, and 11 for this ground. For these reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 2, 6, and 11 are unpatentable over the combined teachings of Okamura and Belitz.

We discuss claims 3–5, 7–10, and 12–15 below.

IPR2022-00221  
 Patent 10,423,658 B2

### 3. *Dependent Claims 3 and 4*

Claim 3 depends from claim 1 and adds the limitation “further comprising responsive to a click or tap of a first one of the displayed scaled replicas in the first location view, displaying a first digital photograph associated with the first scaled replica in the first location view and a first map image indicating the geographic coordinates of the first geotag.” Claim 4 depends from claim 1, and adds the limitation “further comprising responsive to a click or tap of a first one of the displayed scaled replicas in the second location view, displaying a first digital photograph associated with the first scaled replica in the second location view and a second map image indicating the geographic coordinates of the second geotag.”

To meet the limitations of claim 3, Petitioner asserts that Okamura describes “selecting a content with ‘selection box 894’ from ‘content listing display area 893’ (that displays scaled replicas) causes the content (first digital photograph associated with the first scaled replica) to be displayed on ‘magnified image display area 892.’” Pet. 65–66 (citing Ex. 1005 ¶¶ 439–444, Fig. 50; Ex. 1003 ¶ 150). Petitioner asserts further that “Okamura displays a first map image in ‘map display area 891’ that displays ‘a map related to the corresponding cluster’ (relating to the selected cluster from the map view screen.” *Id.* at 66 (citing Ex. 1005 ¶ 442, Fig. 50; Ex. 1003 ¶ 151). Noting that Patent Owner “has contended that ‘indicating ... geographic coordinates’ represents merely displaying a location on a map,” Petitioner asserts that based “on such an interpretation, Okamura alone (referring to first map image 891 from FIG. 50) renders [claim 3] obvious.” *Id.* (citing Ex. 1003 ¶ 152).

IPR2022-00221  
 Patent 10,423,658 B2

For claim 4, Petitioner asserts that “Okamura discloses multiple scaled replicas in its second location view; any one of Okamura’s contents in content listing display area 893 is a first one of the scaled replicas.” Pet. 69 (citing Ex. 1005 ¶¶ 439–444, Fig. 50; Ex. 1003 ¶ 155). Petitioner asserts further that “operations that can be applied to Okamura’s first location view that is displayed in response to selection of a first thumbnail are equally applicable to Okamura’s second location view that is displayed in response to selection of a second thumbnail” and that “a POSITA would have understood and found obvious that the images in the second location view would change to those associated with the second location upon selection of a thumbnail associated with the second location.” *Id.*

Patent Owner contends that “Okamura does not disclose, and Petitioner does not argue, that the map in display area 891 (alleged [first/second] map image) is displayed ‘responsive to’ a click or tap of selection box 894 (alleged scaled replica), as claimed.” PO Resp. 64. Patent Owner contends that in Okamura “the play view screen 890 and map in display area 891 display when ‘one of [the] cluster maps [is] selected on the map view screen.’” *Id.* (citing Ex. 1005 ¶¶ 440–442) (footnote omitted). In other words, Patent Owner contends, “Okamura’s alleged *map image* is already displayed responsive to a selection in the map view, and **before** any click or tap in the *first location view*” and “[a]n element that is already displayed before a click or tap is not displayed ‘responsive to’ the click or tap.” *Id.* (citing Ex. 2023 ¶ 259; *id.* at 17–25).

Petitioner replies that “as explained in the Petition, the corresponding map image of Okamura is displayed ***in response*** to the user’s selection.” Pet. Reply 23 (citing Pet. 65–70, Ex. 1003 ¶ 155; Ex. 1047 ¶ 36). Petitioner

IPR2022-00221  
 Patent 10,423,658 B2

asserts that “a POSITA would have understood that the identified map image of Okamura ‘would change to those associated with’ the location selection via the thumbnail.” *Id.* (citing Pet. 69–70, Ex. 1003 ¶ 155; Ex. 1047 ¶ 36). Petitioner replies further, that “even assuming for sake of argument that the underlying map in Okamura does not change, the coordinates certainly do, thereby displaying, responsive to the selection, a map image with coordinates of the selected photo.” *Id.* (citing Pet. 65–70, Ex. 1003 ¶ 155; Ex. 1047 ¶ 37).

Patent Owner replies that Okamura “discloses that upon selecting a scaled replica, the ‘mark 897 . . . is displayed in a different manner of display from that of the other marks,’” but “[e]ven if the shading of a map marker may change responsive to a selection of a scaled replica, the underlying map image was already displayed and, therefore, is not the claimed [first/second] map image.” PO Sur-reply 32–33 (citing Ex. 1005 ¶ 442; Ex. 2023 ¶¶ 124–128, 258–259).

In order to evaluate the parties’ positions regarding claims 3 and 4 we need to understand Okamura’s disclosure as it pertains to map display area 891 and content listing display area 893. Paragraphs 441 and 444 of Okamura, reproduced below with emphasis added, are instructive.

[0441] The play view screen 890 includes, for example, three display areas, *a map display area 891*, a magnified image display area 892, and *a content listing display area 893*. It should be noted that although not shown in FIG. 50, in the area other than these three display areas, *a wide-area map (cluster wide-area map) related to the corresponding cluster can be displayed as a background image*. In this case, the wide-area map may be displayed in an inconspicuous color (for example, grey).

[0444] In the content listing display area 893, a listing of contents belonging to the corresponding cluster is displayed *as*



IPR2022-00221  
 Patent 10,423,658 B2

*thumbnails.* For example, if there is a large number of contents to be listed for display, only some of the contents to be listed for display may be displayed in the content listing display area 893, and the other contents may be displayed by a scroll operation. For example, the other contents may be scroll displayed by a scroll operation using a left button 895 and a right button 896. Also, at least one content can be selected from among the listing of contents displayed in the content listing display area 893. *In the example shown in FIG. 50, the content displayed at the center portion of the content listing display area 893 is selected.* The content thus selected is displayed while being attached with the selection box 894 indicating the selected state. This selection box 894 can be in, for example, yellow color. A selecting operation on a content can be made by using a cursor. An image corresponding to the content attached with the selection box 894 in the content listing display area 893 is displayed in magnified form in the magnified image display area 892. Editing, processing, and the like can be performed on each content by a user operation.

Ex. 1005 ¶¶ 441, 444.

Petitioner's assertions that "the corresponding map image [891] of Okamura is displayed *in response* to the user's selection" and that "a POSITA would have understood that the identified map image of Okamura 'would change to those associated with' the location selection via the thumbnail" are supported by the paragraphs quoted above, because the content that is displayed is selected by selection of a thumbnail in content listing display area 893. Ex. 1005 444.

Having considered the evidence, testimony and arguments in the record, we determine that a person of ordinary skill in the art would have combined the teachings of Okamura and Belitz in the manner proposed in the challenge to claims 3 and 4 for this ground. For these reasons, we determine that Petitioner has demonstrated by a preponderance of the

IPR2022-00221  
Patent 10,423,658 B2

evidence that claims 3 and 4 are unpatentable over the combined teachings of Okamura and Belitz.

4. *Dependent Claim 5*

Claim 5 requires, the method of claim 1:

wherein the plurality of selectable elements further includes a people selectable element, the method further comprising responsive to a click or tap of the people selectable element, displaying a people view, the displaying the people view including displaying:

(i) a first person selectable thumbnail image including an image of a face of a first person, a third set of digital photographs and videos including digital photographs and videos associated with the first person;

(ii) a name associated with the first person, the name associated with the first person being displayed adjacent to the first person selectable thumbnail image;

(iii) a second person selectable thumbnail image including an image of a face of a second person, a fourth set of digital photographs and videos including digital photographs and videos associated with the second person; and

(iv) a name associated with the second person, the name associated with the second person being displayed adjacent to the second person selectable thumbnail image.

Ex. 1001, 36:30–49.

For each limitation of claim 5, Petitioner asserts that Okamura alone or in combination with Belitz meets that limitation. Pet. 70–77. Petitioner also provides the testimony of Dr. Greenspun in support of its position with respect to the limitations of claim 5. *See* Ex. 1003 ¶¶ 156–164. For the uncontested limitations of claim 5, we have considered Petitioner’s evidence and arguments with respect to these claims, including the relevant testimony of Dr. Greenspun and Dr. Reinman. We determine that Petitioner has shown by a preponderance of the evidence that the combined teachings of Okamura

IPR2022-00221  
Patent 10,423,658 B2

and Belitz meet the requirements of the uncontested limitations of the claim. We focus our discussion below of the contested limitations of claim 5.

Petitioner asserts that “Okamura describes that, ‘when the mouse is placed over a thumbnail image 432 by a user operation on the index screen 430 shown in FIG. 21, the color of the thumbnail image 432 changes, and pieces of information 433 related to the thumbnail image 432 are displayed.’” Pet. 74 (citing Ex. 1005 ¶ 247). According to Petitioner, “Okamura explains that, ‘as the *pieces of information 433* related to the thumbnail image 432, for example, other pieces of information such as the *name of the person* corresponding to the face may be displayed as well.’” *Id.* (citing Ex. 1005 ¶ 247). Petitioner asserts further that as Okamura displays the number of digital files next to its associated thumbnail image, its “user interface would display the name *adjacent* to the first person selectable thumbnail image.” *Id.* (citing Ex. 1005 ¶¶ 99, 110, 139, 232–248, 267, Fig. 21; Ex. 1003 ¶ 162).

In addition, Petitioner asserts that

Okamura discloses multiple person selectable thumbnail images and, because Okamura’s multiple face-based thumbnails are displayed on the index screen (FIG. 21), any one of the person selectable thumbnail images (e.g., as annotated below) displayed on the index screen is a second person selectable thumbnail image, as long as it is different from a first person selectable thumbnail image (e.g., thumbnail 432).

Pet. 75 (citing Ex. 1005 ¶¶ 234, 246–260, 267, Fig. 21; Ex. 1003 ¶ 163).

Patent Owner contends that “in Okamura, the information 433 (allegedly containing the name) in the face cluster display area 431 (the alleged people view) is *not* displayed in response to selecting FACE tab 412 (the alleged people selectable element),” “[i]nstead, the user must make a

IPR2022-00221  
 Patent 10,423,658 B2

separate input that involves placing ‘the mouse . . . over a thumbnail image 432 by a user operation’ (i.e., a mouse-over) to display information 433.” PO Resp. 65 (citing Ex. 2023 ¶ 263; Ex. 1005 ¶ 247). Thus, according to Patent Owner, “any alleged ‘name’ in the face cluster display area 431 is not displayed responsive to a click or tap of the FACE tab 412.” *Id.* (citing Ex. 2023 ¶ 263).

Patent Owner contends further that “Okamura does not disclose displaying both a ‘name associated with the first person’ *and* a ‘name associated with the second person’ in the same view as required by claim 5” because “[t]he *only* way to display an alleged name in Okamura is to mouse-over a particular thumbnail image.” PO Resp. 66 (citing Ex. 2023 ¶¶ 264–265; Ex. 1005 ¶ 247).

In Section II.C.2 above, we rejected Patent Owner’s narrow claim construction interpreting the claim term “responsive to” to require a direct cause and effect relationship and adopted Petitioner’s claim construction. Applying the claim construction we adopted in Section II.C.2, we determine that the intervening mouse roll-over required to display the first or second name does not preclude Okamura from meeting the limitations of claim 5 requiring display of first and second names, because the claim does not preclude subsequent user interaction or software implementation.

In Section II.D.2 above, we rejected Patent Owner’s narrow claim construction interpreting the first and second name displaying terms in claim 5 to require simultaneous display of both names. Nothing in claim 5 precludes the display of a first name followed by the display of a second name. We determine that Okamura meets these claim limitations.

IPR2022-00221  
 Patent 10,423,658 B2

Having considered the evidence, testimony and arguments in the record, we determine that a person of ordinary skill in the art would have combined the teachings of Okamura and Belitz in the manner proposed in the challenge to claim 5 for this ground. For these reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claim 5 is unpatentable over the combined teachings of Okamura and Belitz.

5. *Dependent Claims 7 and 10*

Claim 7 requires, the method of claim 1, “further comprising responsive to a click or tap of the first person selectable thumbnail image, displaying a first person view, the displaying the first person view including displaying (i) the name associated with the first person and (ii) a scaled replica of each of the digital photographs and videos in the third set of digital photographs.” Ex. 1001, 36:56–62. Claim 10 requires, the method of claim 7, “further comprising responsive to a click or tap of the second person selectable thumbnail image, displaying a second person view, the displaying the second person view including displaying (i) the name associated with the second person and (ii) a scaled replica of each of the digital photographs and videos in the fourth set of digital photographs.” Ex. 1001, 37:4–11.

Petitioner asserts that “Okamura describes that selecting, by a click or tap, a face-based thumbnail image (‘when a desired cluster is determined **by a user operation**’ . . . ‘for example, **a click operation** with the mouse’) causes the user interface to display ‘contents included in the face cluster.’” Pet. 80 (citing Ex. 1005 ¶¶ 261–262, Figs. 21, 24; Ex. 1003 ¶ 168). Petitioner asserts further that “[c]ontent display area 441 includes a scaled replica of each digital file in the third set of digital files.” *Id.* at 81 (citing

IPR2022-00221  
Patent 10,423,658 B2

Ex. 1003 ¶ 169). Petitioner asserts further that “[b]ecause Okamura describes multiple person selectable thumbnail images, Okamura describes display of a second person view responsive to a selection of the second person selectable thumbnail image.” *Id.* at 92 (citing Ex. 1003 ¶ 187).

Patent Owner contends that “the content playback screen 460 of Fig. 24 (alleged [first/second] person view) is *not* displayed responsive to a click or tap in the index screen 430 of FIG. 21,” “[i]nstead, there are multiple intervening steps and views between FIG. 21 (the alleged people view) and FIG. 24 (the alleged person view).” PO Resp. 69 (citing Ex. 2023 ¶¶ 272–278; *id.* at 17–24).

Patent Owner’s argument rests on its overly narrow construction of the claim term “responsive to” which we rejected in Section II.C.2 above. Okamura discloses display of the claimed scaled replicas “responsive to” a click or tap of a first or second person selectable thumbnail as required by claims 7 and 10.

Having considered the evidence, testimony and arguments in the record, we determine that a person of ordinary skill in the art would have combined the teachings of Okamura and Belitz in the manner proposed in the challenge to claims 7 and 10 for this ground. For these reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 7 and 10 are unpatentable over the combined teachings of Okamura and Belitz.

#### 6. *Dependent Claim 8*

Claim 8 requires, the method of claim 7, “wherein the displaying the first person view further includes displaying a first-person-location selectable element.” Ex. 1001, 36:63–65. Petitioner asserts that

IPR2022-00221  
 Patent 10,423,658 B2

“Okamura’s position cluster transition button 455 in the corner of the first person view . . . is a first-person-location selectable element.” Pet. 83 (citing Ex. 1005 ¶¶ 236, 253, 258; Ex. 1003 ¶ 172). Patent Owner does not contest this assertion. *See, generally*, PO Resp. Instead, Patent Owner contends that Petitioner’s reliance on Yee in combination with Okamura and Belitz is flawed. PO Resp. 81–85. We understand this argument to pertain only to Ground 4 and not to Ground 1.

Having considered the evidence, testimony and arguments in the record, we determine that a person of ordinary skill in the art would have combined the teachings of Okamura and Belitz in the manner proposed in the challenge to claim 8 for this ground. For these reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claim 8 is unpatentable over the combined teachings of Okamura and Belitz..

#### 7. *Dependent Claims 9 and 12*

Claim 9 requires, the method of claim 8, “further comprising responsive to a click or tap of the first-person location selectable element, displaying a representation of all locations having a digital photograph or video associated with the first person.” Ex. 1001, 36:66–37:3. Claim 12 requires, the method of claim 11,<sup>10</sup> “further comprising responsive to a click or tap of the second-person-location selectable element, displaying a representation of all locations having a digital photograph or video associated with the second person.” *Id.* at 37:16–20.

For claim 9, Petitioner asserts that “through Okamura’s disclosure of condition setting and sub-clustering, a POSITA would have found it obvious

---

<sup>10</sup> We note that claim 11 depends from claim 10, which depends from claim 9, but Patent Owner does not address these claims in this argument.

IPR2022-00221  
 Patent 10,423,658 B2

to display, in Okamura’s first person view, a first-person-location selectable element (e.g., position cluster transition button 455) that, responsive to a click or tap, displays sub-cluster information that presents locations where images/videos of the first person were taken.” Pet. 89–90 (citing Ex. 1005 ¶¶ 98–101, 204, 236, 253, 258, 265–266, 271–280, Figs. 25–26). Petitioner asserts further that “[a] POSITA would have found it obvious to display all of the location sub-clusters associated with the first person” and that “[a] POSITA would have viewed display of all locations as a matter of obvious design choice and selection of one of a finite number of display options (e.g., all or less than all) that would have been obvious to try.” *Id.* at 90. Petitioner refers to this discussion in addressing claim 12. *Id.* at 93.

Patent Owner contends that “Petitioner failed to show that the position cluster transition button 455 can be clicked or tapped as required by claims 9 and 12.” PO Resp. 76. According to Patent Owner, “Okamura’s FIG. 26 shows ‘a content playback screen 470 that is displayed *when the mouse is placed over* the position cluster transition button 455 on the content playback screen 450 shown in FIG. 23.’” *Id.* (citing Ex. 1005 ¶ 265). Thus, Patent Owner contends that “the position cluster transition button 455 is not clicked or tapped because it is replaced with the cluster map 471 as soon as the mouse moves over it.” *Id.* (citing Ex. 2023 ¶ 294).

Petitioner replies that “Dr. Greenspun has previously explained that this ‘button’ would indeed be considered to be clicked/tapped by a POSITA.” Pet. Reply 27 (citing Ex. 2024, 146:12–150:6).

We do not agree with Petitioner’s position. We do not agree that a mouse roll-over is the same as a “click or tap” as required by claims 9 and 12. Our analysis of the meaning of the claim term “responsive to” in Section



IPR2022-00221  
 Patent 10,423,658 B2

II.C.2 above, makes clear that mouse roll-over is not a “click or tap.” Further, Petitioner has not adequately explained why a person of ordinary skill in the art would have found it obvious to display all of the location sub-clusters associated with the first person or why such display was an obvious matter of design choice and selection of one of a finite number of display options. Instead, Petitioner relies on conclusory statements of obviousness.

Having considered the evidence, testimony and arguments in the record, we determine that a person of ordinary skill in the art would not have combined the teachings of Okamura and Belitz in the manner proposed in the challenge to claims 9 and 12 for this ground. For these reasons, we determine that Petitioner has not demonstrated by a preponderance of the evidence that claims 9 and 12 are unpatentable over the combined teachings of Okamura and Belitz.

8. *Dependent Claim 13*

Claim 13 require, the method of claim 1:

wherein the plurality of selectable elements further includes an album selectable element, the method further comprising responsive to a click or tap of the album selectable element, displaying an album view, the displaying the album view including displaying:

(i) a first album selectable thumbnail image including a scaled representation of at least one digital photograph in a third set of digital photographs and videos that includes all of the digital photographs and videos associated with a first album tag;

(ii) a first album name associated with the first album, the first album name being displayed adjacent to the first album selectable thumbnail image;

(iii) a second album selectable thumbnail image including a scaled representation of at least one digital photograph in a fourth set of digital photographs and videos that includes all of

IPR2022-00221  
Patent 10,423,658 B2

the digital photographs and videos associated with a second album tag; and

(i[v]) a second album name associated with the second album, the second album name being displayed adjacent to the second album selectable thumbnail image.

Ex. 1001, 37:22–38:13.

For each limitation of claim 13, Petitioner asserts that Okamura alone or in combination with Belitz meets that limitation. Pet. 93–100. Petitioner also provides the testimony of Dr. Greenspun in support of its position with respect to the limitations of claim 13. *See* Ex. 1003 ¶¶ 190–198. For the uncontested limitations of claim 13, we have considered Petitioner’s evidence and arguments with respect to these claims, including the relevant testimony of Dr. Greenspun and Dr. Reinman. We determine that Petitioner has shown by a preponderance of the evidence that the combined teachings of Okamura and Belitz meet the requirements of the uncontested limitations of the claim. We focus our discussion below of the contested limitations of claim 13.

Petitioner asserts that “Okamura’s plurality of selectable elements include ‘*EVENT*’ *tab 411* (‘album selectable element’) for enabling display, responsive to a click or tap, of index screen 421 based on ‘date and time information.’” Pet. 94 (citing Ex. 1005 ¶¶ 234–236, 242–247; Ex. 1003 ¶ 191). Petitioner asserts further that “Okamura’s organizing digital files based on event is an example of an album.” *Id.*

In addition, Petitioner asserts that “Okamura describes a first album selectable thumbnail image (e.g., ‘*thumbnail image 422*’) that represents a third set of *associated digital files*,” and that “Okamura displays a first album tag ‘02.03-01.04.2004’ [i.e. name] adjacent to the first thumbnail

IPR2022-00221  
 Patent 10,423,658 B2

image.” Pet. 95, 97 (citing Ex. 1005 ¶¶ 244–247; Ex. 1003 ¶ 192). Petitioner asserts further that “[b]ecause Okamura’s album selectable thumbnail images are associated with different events, any one of Okamura’s album selectable thumbnail images displayed on index screen 421 is a second album selectable thumbnail image . . . as long as it is different from a first album selectable thumbnail image” and that because “Okamura discloses multiple album selectable thumbnail images (as shown below) and renders obvious a second album name, including displaying a second album name adjacent to the second album selectable thumbnail image.” Pet. 99 (citing Ex. 1005 ¶¶ 244–247, Fig. 20; Ex. 1003 ¶¶ 197–198).

Patent Owner contends that “any alleged ‘album name’ in the index screen 420 (FIG. 20) is not displayed ‘responsive to’ a click/tap of the Event tab 411 (the alleged album selectable element)” because “Okamura explains that the information 433 is only displayed ‘when the mouse is placed over a thumbnail image 432 by a user operation on the index screen 430.’” PO Resp. 87 (citing Ex. 2023 ¶ 327; Ex. 1005 ¶ 247).

Patent Owner contends further that “Okamura does not disclose any view including both the first album name and the second album name.” PO Resp. 88 (citing Ex. 2023 ¶ 328).

Patent Owner’s first argument hinges on its overly narrow construction of the claim term “responsive to.” Applying the claim construction we adopted in Section II.C.2 above, we determine that the intervening mouse roll-over required to display the first or second album name does not preclude Okamura from meeting the limitations of claim 13 requiring display of first and second album names.

IPR2022-00221  
 Patent 10,423,658 B2

In Section II.D.3 above, we rejected Patent Owner’s narrow claim construction interpreting the first and second album name displaying terms in claim 13 to require simultaneous display of both album names. Nothing in claim 13 precludes the display of a first album name followed by the display of a album second name. We determine that Okamura meets these claim limitations.

Having considered the evidence, testimony and arguments in the record, we determine that a person of ordinary skill in the art would have combined the teachings of Okamura and Belitz in the manner proposed in the challenge to claim 13 for this ground. For these reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claim 13 is unpatentable over the combined teachings of Okamura and Belitz.

#### 9. *Dependent Claims 14 and 15*

Claim 14 requires, the method of claim 13,

further comprising responsive to a click or tap of the first album selectable thumbnail image, displaying a first album view, the displaying the first album view including displaying (i) the first album name associated with the first album and (ii) a scaled replica of each of the digital photographs and videos in the third set of digital photographs and videos.

Ex. 1001, 38:14–20. Claim 15 requires, the method of claim 14,

[F]urther comprising responsive to a click or tap of the second album selectable thumbnail image, displaying a second album view, the displaying the second album view including displaying (i) the second album name associated with the second album and (ii) a scaled replica of each of the digital photographs and videos in the fourth set of digital photographs and videos.

*Id.* at 38:21–28.

IPR2022-00221  
 Patent 10,423,658 B2

For claim 14, Petitioner asserts that “Okamura describes selecting the first album selectable thumbnail image with ‘a mouse pointer used to point to an object of instruction or operation on the screen displayed on the display section 181.’” Pet. 100 (citing Ex. 1005 ¶ 234). Petitioner asserts further that “[w]hile Okamura focuses its figures on selection of a face-based thumbnail and display of a person view . . . a POSITA would have found it obvious that Okamura displays a similar album view in response to selection of an album selectable thumbnail image.” *Id.* at 100–101 (citing Ex. 1005 ¶ 254; Ex. 1003 ¶ 199). Petitioner also asserts that a person of ordinary skill in the art would have found it obvious to display a first album view “that includes a scaled replica of each of a third set of digital files associated with the selected album, because a POSITA would have understood that operations applied to a person selectable thumbnail image can be similarly applied to an album selectable thumbnail image.” *Id.* at 101. In addition, Petitioner asserts that “a POSITA would have found it obvious to display the album name (e.g., as part of content information 452) to improve recognition of the album/event (as similarly done in the people view).” *Id.* (citing Ex. 1005 ¶¶ 245–247). For claim 15, Petitioner makes similar assertions regarding a second album and second album name. Pet. 102–103.

Patent Owner contends that “as discussed for claim 5, Okamura does *not* disclose navigating from any of FIGS. 18–21 directly to FIG. 24; there are one or more intermediate views and inputs.” PO Resp. 90 (citing Ex. 2023 ¶ 333; *id.* at 25–29). Patent Owner contends further that “the content listing display area 462 in Okamura (the alleged scaled replicas) is limited to ‘a listing of contents included in the face cluster to which the content displayed in the content display area 441 belongs’” and that “Okamura does

IPR2022-00221  
Patent 10,423,658 B2

not describe displaying the content listing display area 462 in a case where there is no face in the displayed image.” *Id.* (citing Ex. 1005 ¶ 251; Ex. 2023 ¶ 334). Moreover, Patent Owner contends that “Okamura does not disclose any ‘album’ containing a set of digital photographs and videos where a scaled replica of *each* photograph and video in the set is displayed” and that “[w]hile Petitioner argues that it would been ‘obvious that a first album view would include display of . . . scaled replicas,’ this conclusory assertion is insufficient.” *Id.* (citing *TQ Delta, LLC v. Cisco Systems, Inc.*, 942 F.3d 1352, 1359 (Fed. Cir. 2019)).

Petitioner replies that “intervening user actions do not eliminate the ‘responsive to’ relationship.” Pet. Reply 28 (citing Ex. 1047 ¶ 45). Petitioner replies further that “Okamura is not dogmatic in dictating how to navigate between its various screens and a POSITA would have found it obvious to eliminate any intervening steps to the extent necessary for improved user convenience.” *Id.*

We agree with Patent Owner that Okamura does not describe displaying the content listing display area 462 when there is no face in the displayed image and that to extent that Okamura discloses “albums” it does not disclose that such “albums” contain a set of digital photographs and videos where a scaled replica of each photograph and video in the set is displayed. PO Resp. 90. Given this lack of disclosure, we determine that Petitioner has not adequately explained why a person of ordinary skill in the art would modify Okamura to include albums as claimed. Petitioner’s conclusory statements are insufficient.

Having considered the evidence, testimony and arguments in the record, we determine that a person of ordinary skill in the art would not have

IPR2022-00221  
Patent 10,423,658 B2

combined the teachings of Okamura and Belitz in the manner proposed in the challenge to claims 14 and 15 for this ground. For these reasons, we determine that Petitioner has not demonstrated by a preponderance of the evidence that claims 14 and 15 are unpatentable over the combined teachings of Okamura and Belitz.

*F. Ground 2*

Ground 2 applies to claims 3 and 4. Pet. 11. It adds Rasmussen to the Okamura-Belitz combination. *Id.* As we have determined that claims 3 and 4 are unpatentable over the combined teachings of Okamura and Belitz, we also determine that Petitioner has demonstrated by a preponderance of the evidence that claims 3 and 4 are unpatentable over the combined teachings of Okamura, Belitz, and Rasmussen.

*G. Ground 3*

Ground 3 applies to claims 6–12. Pet. 11. It adds Gossweiler to the Okamura-Belitz combination. *Id.* As we have determined that claims 6–8, 10, and 11 are unpatentable over the combined teachings of Okamura and Belitz, we also determine that Petitioner has demonstrated by a preponderance of the evidence that these claims are unpatentable over the combined teachings of Okamura, Belitz, and Gossweiler.

In Section II.E.7 above, we determined that claims 9 and 12 are not unpatentable over the combined teachings of Okamura, and Belitz. Although, claims 9 and 12 are included in Ground 3, the Petition does not address Gossweiler in its challenge to these claims. Thus, Gossweiler does not cure the deficiencies in the Okamura-Belitz combination discussed in Section II.E.7. Accordingly, we determine that Petitioner has not demonstrated by a preponderance of the evidence that claims 9 and 12 are

IPR2022-00221  
Patent 10,423,658 B2

unpatentable over the combined teachings of Okamura, Belitz, and Gossweiler.

#### *H. Ground 4*

Ground 4 applies to claims 8, 9, 11, and 12. Pet. 11. It adds Yee to the Okamura-Belitz combination. *Id.* As we have determined that claims 8 and 11 are unpatentable over the combined teachings of Okamura and Belitz, we also determine Petitioner has demonstrated by a preponderance of the evidence that these claims are unpatentable over the combined teachings of Okamura, Belitz, and Yee.

As discussed above regarding Ground 3, we determined that Petitioner has not demonstrated that claims 9 and 12 are unpatentable over the combined teachings of Okamura and Belitz. In this ground, the Petition addresses Yee in its challenge to these claims. Pet. 90, 93. Specifically, Petitioner asserts that

Although Yee discloses an embodiment where all displayed locations are also limited to a time period (*id.*, [0047]), this embodiment is sufficient to meet the claimed “all locations” because the ’658 Patent similarly describes using time as a filter condition and a POSITA would have understood the display to cover “all locations” of the current set of digital files, even if that set is time limited.

*Id.* at 90 (citing Ex. 1003 ¶ 185).

Patent Owner contends that “Yee does not disclose ‘displaying a representation of *all* locations having a digital photograph or video associated with the [first/second] person’ responsive to a click or tap of the ‘[first/second]-person-location selectable element.’” PO Resp. 81–82 (citing Ex. 2023 ¶ 313). Specifically, Patent Owner contends that in Yee “the representations of locations on the map are limited” to a particular time



IPR2022-00221  
 Patent 10,423,658 B2

period. *Id.* at 82 (citing Ex. 1041 ¶ 45, Fig. 1; Ex. 2023 ¶ 313). Responding to Petitioner’s argument that Yee’s time limited disclosure is sufficient “because the ’658 Patent similarly describes using time as a filter condition,” Patent Owner asserts that “[t]he disclosure of time filters in the ’658 Patent is a non-sequitur.” *Id.*

Patent Owner also contests Petitioner’s argument that “it would have been ‘obvious for the time period selected in Yee to encompass all images/videos of the selected person.’” PO Resp. 82 (citing Pet. 91). Specifically, Patent Owner contends that “even if such a scenario were possible, this would require the user to manipulate the sliding indicator 112 so that all photographs/videos happened to be encompassed in the selected timeframe.” *Id.* at 82–83 (citing Ex. 1041 ¶ 45; Ex. 2023 ¶ 316). In addition, Patent Owner contends that a “POSITA would not have modified Yee to remove the sliding time attribute from FIG. 1 . . . because Yee requires traversing ‘digital records based on *multiple* dimensional attributes’ and states that its system ‘hinges on conceptualizing a digital record as the intersection of *multiple* dimensional attributes.’” *Id.* at 83 (citing Ex. 1041 ¶¶ 1, 24; Ex. 2023 ¶ 323).

Petitioner replies that “Dr. Greenspun previously explained how a POSITA would have viewed a display of all locations as a matter of obvious design choice, particularly in view of the teachings of Yee.” Pet. Reply 27 (citing Ex. 184–186). Petitioner replies further that “as further clarified by Dr. Greenspun, ‘Yee already contains the ability to show all the photos -- or all the locations of all the photos in the database over all time, or shrink it down to just a day, or anything in between.’” *Id.* (citing Ex. 2024, 158:6–22; Ex. 1041 ¶ 45; Ex. 1047 ¶ 43).

IPR2022-00221  
 Patent 10,423,658 B2

Patent Owner replies that Dr. Greenspun admitted that “Yee only displays representations for limited time frames such that less than ‘all locations’ would be displayed.” PO Sur-Reply 33 (citing Ex. 2024, 173:14–174:14; PO Resp. 81–82; Ex. 1041 ¶ 45). Patent Owner replies further that “Petitioner only relied on Yee’s FIG. 1 where the ‘[t]ime attribute [is] the sliding attribute,’ and as established in the POR, a POSITA would not remove the sliding time attribute.” *Id.* (citing PO Resp. 81–85; Ex. 1041 ¶ 50; Ex. 2033, 139:3–144:10; Pet. Reply 27).

We agree with Patent Owner that Yee teaches the use of a sliding time attribute. PO Resp. 82–83, PO Sur-reply 33. We do not agree, however, that Yee’s teaching precludes a time frame that includes all photographs associated with a particular person. Although, the specific example where the focus is set to “Paul” also sets a time attribute, there is nothing in Yee that requires that a time attribute be set. Further, we credit Dr. Greenspun’s testimony in his second declaration that Yee has “the ability to show all of the photo[graph]s” of a particular person or location. Ex. 1047 ¶ 43.

Having considered the evidence, testimony and arguments in the record, we determine that a person of ordinary skill in the art would have combined the teachings of Okamura, Belitz, and Yee in the manner proposed in the challenge to claims 9 and 12 for this ground. For these reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 9 and 12 are unpatentable over the combined teachings of Okamura, Belitz, and Yee.

#### *I. Ground 5*

Ground 5 applies to claims 8, 9, 11, and 12. Pet. 11. It adds Gossweiler and Yee to the Okamura-Belitz combination. *Id.* As we have

IPR2022-00221  
 Patent 10,423,658 B2

determined that claims 8 and 11 are unpatentable over the combined teachings of Okamura and Belitz, we also determine Petitioner has demonstrated by a preponderance of the evidence that claims 8 and 11 are unpatentable over the combined teachings of Okamura, Belitz, Gossweiler, and Yee. Further, as we have determined that claims 9 and 12 are unpatentable over the combined teachings of Okamura, Belitz, and Yee, we also determined that Petitioner has demonstrated by a preponderance of the evidence that claims 9 and 12 are unpatentable over the combined teachings of Okamura, Belitz, Gossweiler, and Yee.

### III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1–13 of U.S. Patent No. Patent 10,423,658 B2 are unpatentable, but has not demonstrated by a preponderance of the evidence that claims 14 and 15 are unpatentable on the bases set forth in the following table.<sup>11</sup>

---

<sup>11</sup> Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Final Decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

IPR2022-00221  
Patent 10,423,658 B2

<b>Claims</b>	<b>35 U.S.C. §</b>	<b>References</b>	<b>Claims Shown Unpatentable</b>	<b>Claims Not Shown Unpatentable</b>
1–15	103(a)	Okamura, Belitz	1–8, 10, 11, 13–15	9, 12, 14, 15
3, 4	103(a)	Okamura, Belitz, Rasmussen	3, 4	
6–12	103(a)	Okamura, Belitz, Gossweiler	6–8, 10, 11	9, 12
8, 9, 11, 12	103(a)	Okamura, Belitz, Yee	8, 9, 11, 12	
8, 9, 11, 12	103(a)	Okamura, Belitz, Yee, Gossweiler	8, 9, 11, 12	
<b>Overall Outcome</b>			1–13	14, 15

IPR2022-00221  
Patent 10,423,658 B2

#### IV. ORDER

In consideration of the foregoing, it is hereby

ORDERED that Petitioner has demonstrated by a preponderance of the evidence that claims 1–13 of U.S. Patent No. Patent 10,423,658 B2 are unpatentable; and

FURTHER ORDERED that because this is a Final Written Decision, any party to the proceeding seeking judicial review of this Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2022-00221  
Patent 10,423,658 B2

For PETITIONER:

Walter Renner  
Jeremy Monaldo  
Hyun Jin In  
FISH & RICHARDSON P.C.  
axf-ptab@fr.com  
jjm@fr.com  
in@fr.com

For PATENT OWNER:

Jennifer Hayes  
George Dandalides  
NIXON PEABODY LLP  
jenhayes@nixonpeabody.com  
gdandalides@nixonpeabody.com

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

SAMSUNG ELECTRONICS CO., LTD.,  
Petitioner,

v.

MEMORYWEB, LLC,  
Patent Owner.

---

IPR2022-00221  
Patent 10,423,658 B2

---

Before LYNNE H. BROWNE, NORMAN H. BEAMER, and  
KEVIN C. TROCK, *Administrative Patent Judges*.

BROWNE, *Administrative Patent Judge*.

DECISION  
Denying Patent Owner's Request on Rehearing  
*37 C.F.R. § 42.71(d)*

## I. INTRODUCTION

Samsung Electronics Co., Ltd. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–15 (the “challenged claims”) of U.S. Patent No. 10,423,658 B2 (Ex. 1001, “the ’658 patent”). We determined, based on the record at that time, that the ’658 patent was eligible for *inter partes* review, and instituted review on all challenged claims on the grounds presented in the Petition. Paper 10 (“Institution Decision” or “Inst. Dec.”).

On July 31, 2023, we entered a Final Written Decision (Paper 40, “Decision” or “Dec.”) determining, in part, that Petitioner had shown claims 1–13 of the ’658 patent to be unpatentable by a preponderance of the evidence. On August 30, 2023, Patent Owner timely filed a Request for Rehearing of that determination in the Decision. Paper 41 (“Patent Owner’s Request” or “Req. Reh’g”).

## II. ANALYSIS

### A. Legal Standards

The applicable requirements for a request for rehearing are set forth in 37 C.F.R. § 42.71(d), which provides:

A party dissatisfied with a decision may file a single request for rehearing, without prior authorization from the Board. The burden of showing a decision should be modified lies with the party challenging the decision. The request must specifically identify all matters the party believes the Board misapprehended or overlooked, and the place where each matter was previously addressed in a motion, an opposition, or a reply.

We review our Decision under an abuse of discretion standard. 37 C.F.R. § 42.71(c). An abuse of discretion may arise if a decision is based on an erroneous interpretation of law, if a factual finding is not supported by substantial evidence, or if the decision represents an unreasonable judgment



IPR2022-00221

Patent 10,423,658 B2

in weighing relevant factors. *Star Fruits S.N.C. v. United States*, 393 F.3d 1277, 1281 (Fed. Cir. 2005); *Arnold P'ship v. Dudas*, 362 F.3d 1338, 1340 (Fed. Cir. 2004); *In re Gartside*, 203 F.3d 1305, 1315–16 (Fed. Cir. 2000). “Substantial evidence is ‘such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.’” *OSI Pharm., LLC v. Apotex Inc.*, 939 F.3d 1375, 1381 (Fed. Cir. 2019) (quoting *Consol. Edison Co. v. N.L.R.B.*, 305 U.S. 197, 229 (1938)). “The substantial evidence standard asks ‘whether a reasonable fact finder could have arrived at the agency’s decision.’” *Id.* at 1381–82 (quoting *Gartside*, 203 F.3d at 1312).

### B. Claim Construction

#### 1. Claim 5: “Displaying the People View Including Displaying: . . . a Name Associated With the First Person . . . and a Name Associated With the Second Person”

In the Final Written Decision, we found that that the claim language of claim 5 which recites “displaying the people view including displaying: . . . a name associated with the first person . . . and a name associated with the second person,” does not require that the first and second names be displayed at the same time. Dec. 20.

In the Request for Rehearing, Patent Owner asserts that “the Decision overlooked evidence that (1) the first person selectable thumbnail image and the first name must be displayed simultaneously and (2) the second person selectable thumbnail image and the second name must be displayed simultaneously” Req. Reh’g 2 (citing Paper 34 (“PO Sur-reply”) 9; Paper 18 (“PO Resp.”) 26–27). Patent Owner first argues that “the Decision appears to have misapprehended the dispute, which was whether claim 5 requires that only one name/thumbnail pair is displayed at a given time (as Petitioner proposed), or whether at least two name/thumbnail pairs must be

IPR2022-00221

Patent 10,423,658 B2

displayed simultaneously (as Patent Owner proposed).” *Id.* at 3 (citing PO Sur-reply 7). Patent Owner asserts that “[i]f claim 5 only displays information for *one* person at any given time, it would effectively be a ‘person view,’ thereby collapsing the distinction between ‘people’ and a ‘person.’” *Id.* at 3–4 (citing *Becton, Dickinson & Co. v. Tyco Healthcare Group, LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010)). Patent Owner also argues that “[t]he Decision indicates that the Board ‘do[es] not agree’ that Petitioner’s construction renders the surrounding ‘people view’ language superfluous but does not explain why.” *Id.* at 4 n.1 (citing Dec. 19–20).

Patent Owner further argues that “[t]he Decision also overlooked Patent Owner’s arguments regarding claim 6, which requires that the ‘[first/second] person selectable thumbnail image[s]’ in the people view be displayed ‘in an alphabetical order based on the names.’” Req. Reh’g 4 (citing PO Sur-reply 9; Paper 39, 29:1–13).

We do not agree that we overlooked or misapprehended the dispute as to construction of this claim language. Rather, we addressed it on pages 18–20 of Final Written Decision. As we stated in the Decision, “nothing in the ’658 Patent requires the simultaneous display of the name of the first person and the name of the second person.” Dec. 19. The fact that Patent Owner disagrees with our resolution of this issue is not grounds for rehearing.

With respect to claim 6, this argument was first presented in Patent Owner’s Sur-reply. PO Sur-reply 9. Patent Owner does not indicate where this argument was raised in the Patent Owner Response and the argument is not responsive to arguments raised in Petitioner’s Reply. The argument is therefore untimely. Further, the argument as to claim 6 does not advance Patent Owner’s ultimate position that “[t]he Board should . . . rehear its

IPR2022-00221

Patent 10,423,658 B2

claim construction and find that claim 5 requires the simultaneous display of both names.” Req. Reh’g 5. An argument that the **thumbnails** must be displayed simultaneously to be displayed in an alphabetical order based on the names does not further the argument that the **names** must be displayed simultaneously. The thumbnails could be displayed alphabetically, for example, based on names that are known but not displayed. This would still result in displaying the thumbnails in alphabetical order based on the associated names.

2. *Claims 3–5, 7, 9, 10, and 12–15: “Responsive to a Click or Tap . . . Displaying”*

In the Final Written Decision, we found that “‘responsive to’ merely requires that the second event happen ‘subsequent to’ the first event based on a combination of user interaction and software implementation.” Dec. 18 (quoting Pet. Reply 4).

In the Request for Rehearing, Patent Owner states that “the Decision rejected Patent Owner’s cause-effect construction because ‘[i]f ‘responsive to a click or tap’ is construed to require a direct cause and effect relationship . . . the full scope of the claim 1 is not enabled for large sets of photographs or videos.’” Req. Reh’g 5–6 (citing Dec. 17). Patent Owner asserts that “Petitioner never argued that the claims would not be enabled under Patent Owner’s construction,” and that “Patent Owner’s construction does not exclude disclosed embodiments.” *Id.* at 6. Patent Owner further asserts that it “did not argue that its claim construction prohibits scrolling if the display is not large enough to show large numbers of photographs or videos simultaneously.” *Id.* Patent Owner concludes that, therefore, “the Decision appears to have misapprehended the parties’ arguments.” *Id.*

Patent Owner also asserts that “[i]n focusing on a hypothetical ‘large set[] of photographs and videos,’ the Decision overlooked or misapprehended the scope of the claimed ‘set.’” Req. Reh’g 6 (citing Dec. 17). Patent Owner asserts that “the claims do not need to read on every possible ‘set’ of digital photographs and videos.” *Id.* at 7 (citing *TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1373 (Fed. Cir. 2008); PO Sur-reply 6, 10).

We do not agree that we overlooked or misapprehended the arguments related to this claim language. Rather, we addressed them on pages 14–18 of Final Written Decision. We ultimately credited Dr. Greenspun’s testimony regarding claim construction for “responsive to a click or tap,” and adopted the definition advanced by Petitioner and supported by Dr. Greenspun as our own. Dec. 18. The fact that Patent Owner disagrees with our resolution of this issue is not grounds for rehearing.

### *C. Claims 5 and 13*

With respect to claims 5 and 13, Patent Owner states that “the Decision found that Okamura disclosed the ‘people view’ of claim 5, in part, because the Decision ‘rejected Patent Owner’s narrow claim construction interpreting the first and second name displaying terms in claim 5 to require simultaneous display of both names.’” Req. Reh’g 7 (quoting Dec. 53). Patent Owner further states that “the Decision ‘rejected Patent Owner’s narrow claim construction interpreting the first and second album name displaying terms in claim 13 to require simultaneous display of both album names.’” *Id.* at 8 (quoting Dec. 61). Patent Owner asserts that if we rehear our construction of claim 5 in view of its arguments regarding display of both names, that we should also rehear our unpatentability findings for claims 5 and 13.

As discussed above, we do not reconsider our construction of “displaying the people view including displaying: . . . a name associated with the first person . . . and a name associated with the second person,” as recited in claim 5, and therefore, we need not reconsider Patent Owner’s arguments regarding claims 5 and 13. Ex. 1001, 36:28–49.

*D. Claims 7 and 10*

Patent Owner notes that claims 7 and 10 recite “responsive to a click or tap of the [first/second] person selectable thumbnail image, displaying a [first/second] person view including displaying (i) the name associated with the [first/second] person and (ii) a scaled replica of each of the digital photographs and videos in the [third/fourth] set of digital photographs.” Req. Reh’g 8. Patent Owner asserts that “[t]he Petition identified [Okamura’s] FIG. 24’s content playback screen 460 as allegedly corresponding to the claimed ‘[first/second] person view’ and alleged that selecting a thumbnail in FIG. 21 (the alleged people view) causes the content playback screen 460 to be displayed.” *Id.* (citing Pet. 81; PO Resp. 69). Patent Owner asserts that this is incorrect, and instead that “the evidence demonstrated that the content playback screen 460 in FIG. 24 (alleged person view) is displayed when the user selects one of the face boxes 456–459 in FIG. 23.” *Id.* at 8–9 (citing PO Resp. 69–72; PO Sur-reply 13–15).

Patent Owner asserts that we did not find that Okamura discloses a direct transition from figure 21 to figure 24 but that we instead found that “Patent Owner’s argument . . . rests on its overly narrow construction of the claim term ‘responsive to.’” Req. Reh’g at 9 (citing Dec. 55). Patent Owner concludes that if we rehear this claim construction, we should also rehear the unpatentability findings for these claims. *Id.*

Patent Owner asserts that “even if the Board does not rehear its claim construction, the Board should rehear its unpatentability findings because the Decision overlooked Patent Owner’s argument that Okamura does not disclose displaying scaled replicas ‘responsive to’ a click or tap of the first/second person selectable thumbnail under ‘any reasonable construction of ‘responsive to.’” Req. Reh’g 9. Patent Owner explains that

If “responsive to” allows for more than one but less than infinite intervening inputs, views, and decisions, the Decision is unclear how Okamura’s disclosure—which requires (1) a first face selection and first input in FIG. 21 (alleged people view) to display FIG. 22, (2) a second input in FIG. 22 to display FIG. 23, and (3) a second face selection and third input in FIG. 23 to display FIG. 24 (alleged person view)—meets the Board’s construction.

*Id.* at 10.

Finally, Patent Owner asserts that we “overlooked the fact that the person selected in FIG. 24 (alleged first person view) and the person selected via thumbnail 432 in FIG. 21 (alleged people view) are *different* people.” Req. Reh’g 10.

As discussed above, we do not reconsider our construction of “responsive to a click or tap . . . displaying,” and therefore, Patent Owner does not demonstrate a basis for rehearing based on this construction. Further, Patent Owner does not otherwise present any basis for rehearing our decision based on our application of Okamura. We address the application of Okamura to claims 7 and 10 on pages 54–55 of the Decision. The fact that Patent Owner disagrees with our resolution of this issue is not grounds for rehearing.

With respect to Patent Owner’s argument that we overlooked that the person selected in figure 24 is different than the person selected in figure 21,

IPR2022-00221

Patent 10,423,658 B2

we point out that the test for obviousness “is what the combined teachings of the references would have suggested to those of ordinary skill in the art,” and “not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference[,] nor . . . that the claimed invention must be expressly suggested in any one or all of the references.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). “A person of ordinary skill is also a person of ordinary creativity, not an automaton.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). Petitioner has demonstrated that the teachings of Okamura render the subject matter of claims 7 and 10 obvious whether or not the person selected in figure 24 of Okamura is the same as person selected in figure 21.

For these reasons, Patent Owner does not show that the Board misapprehended or overlooked Patent Owner’s arguments regarding claims 7 and 10.

IPR2022-00221

Patent 10,423,658 B2

## III. CONCLUSION

For the above reasons, after considering Patent Owner's Request, we maintain the outcome of the Decision.

Outcome of Decision on Rehearing:

<b>Claims</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Denied</b>	<b>Granted</b>
5–8, 10, 11, 13–15	103(a)	Okamura, Belitz	5–8, 10, 11, 13	
6–8, 10, 11	103(a)	Okamura, Belitz, Gossweiler	6–8, 10, 11	
8, 9, 11, 12	103(a)	Okamura, Belitz, Yee	8, 9, 11, 12	
8, 9, 11, 12	103(a)	Okamura, Belitz, Yee, Gossweiler	8, 9, 11, 12	
<b>Overall Outcome</b>			5–13	



IPR2022-00221

Patent 10,423,658 B2

## Final Outcome of Final Written Decision after Rehearing:

<b>Claims</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/ Basis</b>	<b>Claims Shown Unpatentable</b>	<b>Claims Not Shown Unpatentable</b>
1–15	103(a)	Okamura, Belitz	1–8, 10, 11, 13	9, 12, 14, 15
3, 4	103(a)	Okamura, Belitz, Rasmussen	3, 4	
6–12	103(a)	Okamura, Belitz, Gossweiler	6–8, 10, 11	9, 12
8, 9, 11, 12	103(a)	Okamura, Belitz, Yee	8, 9, 11, 12	
8, 9, 11, 12	103(a)	Okamura, Belitz, Yee, Gossweiler	8, 9, 11, 12	
<b>Overall Outcome</b>			1–13	14, 15

## IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Patent Owner's Rehearing Request is *denied*.

IPR2022-00221  
Patent 10,423,658 B2

For PETITIONER:

Walter Renner  
Jeremy Monaldo  
Hyun Jin In  
FISH & RICHARDSON P.C.  
axf-ptab@fr.com  
jjm@fr.com  
in@fr.com

For PATENT OWNER:

Jennifer Hayes  
George Dandalides  
NIXON PEABODY LLP  
jenhayes@nixonpeabody.com  
gdandalides@nixonpeabody.com

(12) **United States Patent**  
**Desmond et al.**

(10) **Patent No.:** **US 10,423,658 B2**  
(45) **Date of Patent:** **\*Sep. 24, 2019**

(54) **METHOD AND APPARATUS FOR MANAGING DIGITAL FILES**

(71) Applicant: **MemoryWeb, LLC**, Glen Ellyn, IL (US)

(72) Inventors: **Christopher J. Desmond**, Glen Ellyn, IL (US); **Nancy L. Desmond**, Glen Ellyn, IL (US); **L. Michael Taylor**, Chicago, IL (US)

(73) Assignee: **NCM IP HOLDINGS, LLC**, Glen Ellyn, IL (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 518 days.  
  
This patent is subject to a terminal disclaimer.

(21) Appl. No.: **15/375,927**

(22) Filed: **Dec. 12, 2016**

(65) **Prior Publication Data**  
US 2017/0091225 A1 Mar. 30, 2017

**Related U.S. Application Data**

(63) Continuation of application No. 14/193,426, filed on Feb. 28, 2014, now Pat. No. 9,552,376, which is a (Continued)

(51) **Int. Cl.**  
**G06F 16/90** (2019.01)  
**G06F 16/58** (2019.01)  
(Continued)

(52) **U.S. Cl.**  
CPC ..... **G06F 16/5866** (2019.01); **G06F 16/51** (2019.01); **G06F 16/901** (2019.01); **G06F 16/907** (2019.01); **G06F 3/0481** (2013.01)

(58) **Field of Classification Search**  
CPC ... G06F 16/5866; G06F 16/907; G06F 16/901  
See application file for complete search history.

(56) **References Cited**  
  
U.S. PATENT DOCUMENTS  
  
5,694,514 A 12/1997 Evans  
6,629,104 B1 9/2003 Parulski  
(Continued)  
  
OTHER PUBLICATIONS  
  
Kustanowitz et al., "Motivating Annotation for Personal Digital Photo Libraries: Lowering Barriers while Raising Incentives," Tech. Report HCIL-2004-18, U. Maryland, 2005 (10 pages).  
(Continued)  
  
*Primary Examiner* — Loc Tran  
(74) *Attorney, Agent, or Firm* — Nixon Peabody LLP

(57) **ABSTRACT**  
  
A computer-implemented method of associating digital tags with digital files comprises storing a plurality of digital files having embedded therein content data and metadata including tags; receiving, via a user interface device of a client device, a first tag label containing alphanumeric text created and inputted by a user of the client device; modifying, using a controller device, a selected first one of the tags of the metadata in a first of the digital files to include the first tag label; receiving, via the user interface device or another user interface device, an instruction to search for all of the digital files having at least the first tag label; responsive to receiving the instruction, automatically searching for all of the digital files having at least the first tag label; and displaying, on a video display device associated with the client device, a first indication of the first tag label.

**15 Claims, 50 Drawing Sheets**

Appx188

1

SAMSUNG 1001

## US 10,423,658 B2

Page 2

**Related U.S. Application Data**

continuation-in-part of application No. 13/157,214,  
filed on Jun. 9, 2011, now Pat. No. 9,098,531.

(51) **Int. Cl.**

**G06F 16/51** (2019.01)  
**G06F 16/901** (2019.01)  
**G06F 16/907** (2019.01)  
**G06F 3/0481** (2013.01)

## (56)

**References Cited**

## U.S. PATENT DOCUMENTS

7,372,976 B2	5/2008	Rhoad	
7,480,669 B2	1/2009	Lo	
7,694,236 B2	4/2010	Gusmorino	
8,150,844 B2	4/2012	Redstone	
8,484,223 B2	7/2013	Ota	
2006/0165380 A1 *	7/2006	Tanaka .....	G11B 27/34 386/227
2007/0282908 A1	12/2007	Van Der Meulen	
2009/0113350 A1 *	4/2009	Hibino .....	G06F 16/41 715/853
2009/0265631 A1	10/2009	Sigurbjornsson	

## OTHER PUBLICATIONS

Miller et al., "Give and take: a study of consumer photo-sharing culture and practice," CHI '07 Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, pp. 347-356, 2007 (10 pages).

Ames et al., "Why we tag: motivations for annotation in mobile and online media," CHI '07 Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, pp. 971-980, ACM, 2007 (10 pages).

Yee et al., "Faceted Metadata for Image Search and Browsing", CHI 2003, pp. 401-408, 2003, ACM.

Ferre, "CAMELIS: Organizing and Browsing a Personal Photo Collection with a Logical Information System", Int. Conf. Concept Lattices and Their Applications, pp. 112-123, 2007, HAL.

Tomasson et al., "PhotoCube: Effective and Efficient Multi-Dimensional Browsing of Personal Photo Collections", ICMR '11, 2011, ACM.

Bartolini et al., "Integrating Semantic and Visual Facets for Browsing Digital Photo Collections", SBED, pp. 65-72, 2009.

Trattner et al., "Evaluating Tag-Based Information Access in Image Collections", Proceedings of the 23<sup>rd</sup> ACM Conference on Hypertext and Social Media, pp. 113-122, 2012 ACM.

Kang et al., "Capture, Annotate, Browse, Find, Share: Novel Interfaces for Personal Photo Management", International Journal of Human-Computer Interaction, 23(3), pp. 315-337, 2007, Lawrence Erlbaum Associates, Inc.

Jaffe et al., "Generating Summaries and Visualization for Large Collections of GeoReferenced Photographs", MIR'06, pp. 89-98, 2006 ACM.

Tornial et al., "Sharing, Discovering and Browsing Geotagged Pictures on the Web", 2007, Hewlett-Packard Development Company, L.P., pp. 1-18.

Snavely et al., "Photo Tourism: Exploring Photo Collection in 3D", SIGGRAPH '06 ACM Transactions on Graphics, vol. 25, Issue 3, pp. 835-846, 2006 ACM.

Kisilevich et al., "Event-based analysis of People's Activities and Behavior Using Flickr and Panoramio Geotagged Photo Collections", 14<sup>th</sup> International Conference Information Visualization, pp. 289-296, 2010 IEEE.

Ahern et al., "World Explorer: Visualizing Aggregate Data From Unstructured Text in Geo-Referenced Collections", JCSDL'07, pp. 1-10, 2007, ACM.

Kopf et al., "Deep photo: model-based photograph enhancement and viewing", ACM Transactions on Graphics, vol. 27, No. 5, Article 116, Dec. 2008, ACM (10 pages).

\* cited by examiner

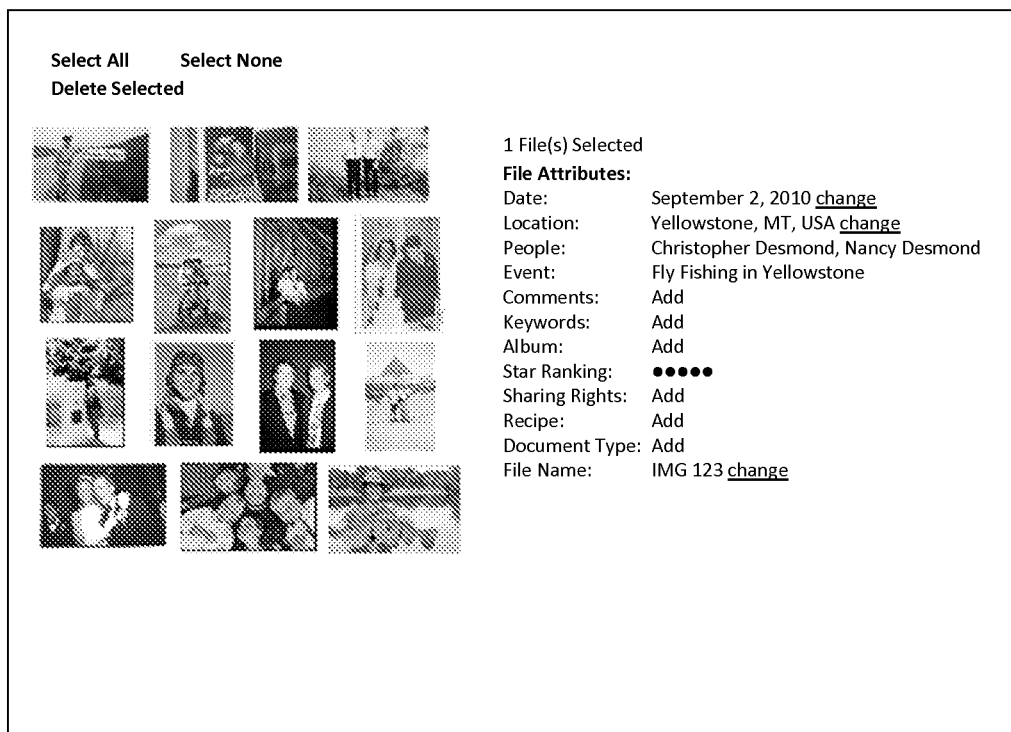
U.S. Patent

Sep. 24, 2019

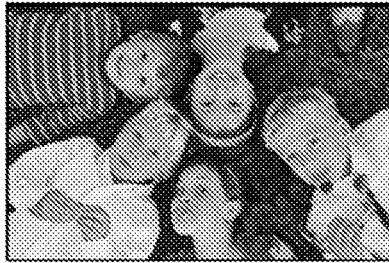
Sheet 1 of 50

US 10,423,658 B2

## FIG. 1



**FIG. 2**



Comments:

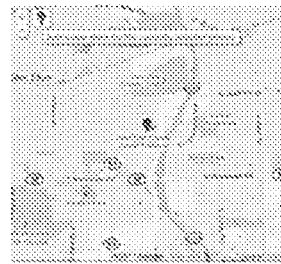
Suzanne and Anthony's Wedding Party where the cousins posed for a photo in the grass. Note, Jack with the lollipop and the photographer with his shoe in the photo

People:

Jack Wong  
CJ Wong  
Mary Firestone  
Zoe Peika  
Nick Persons

Event: Suzanne & Anthony's Wedding Reception 2010

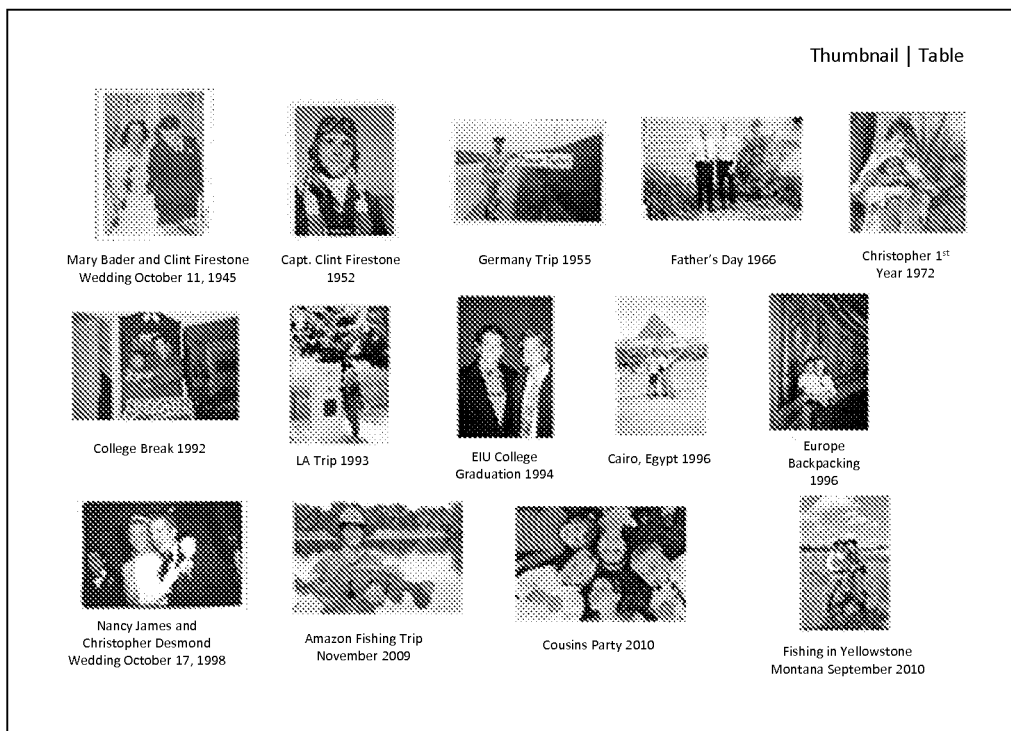
Camera Details: more



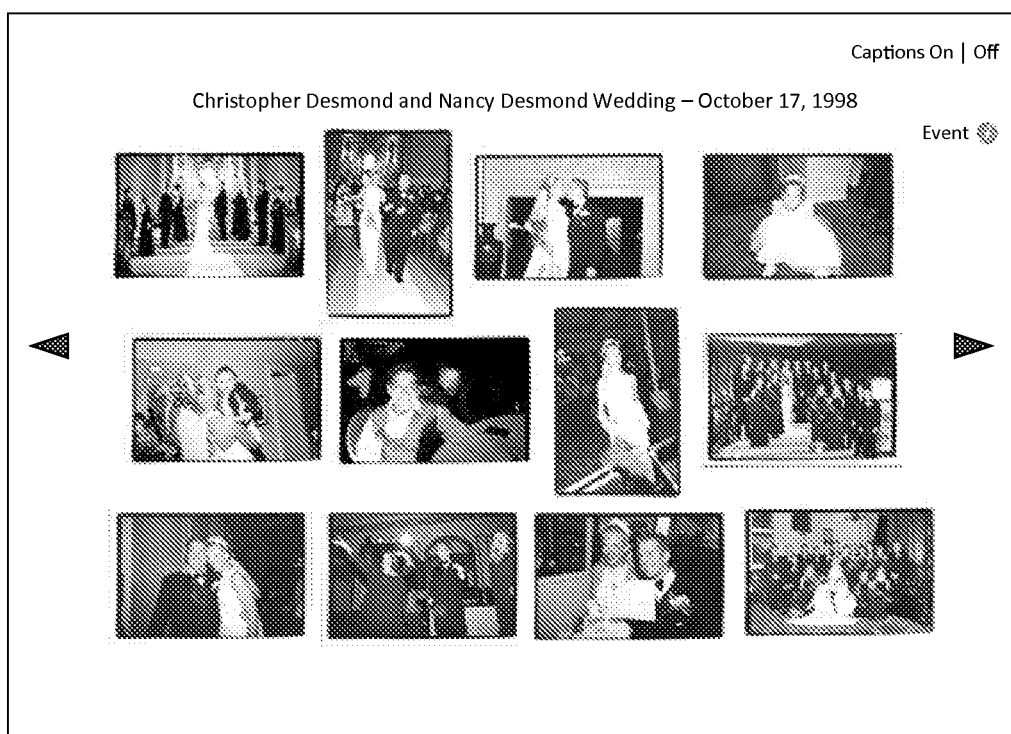
Location:

Historical Society  
Lisle, IL 60532

**FIG. 3**

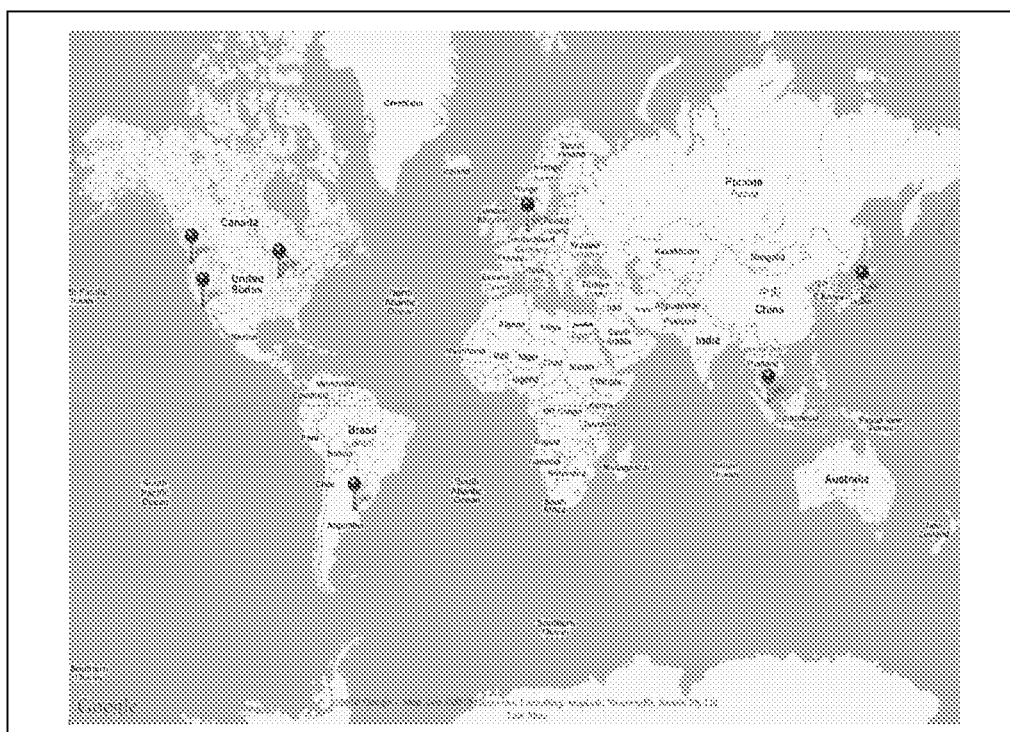


**FIG. 4**






**FIG. 5**



**FIG. 6**



**FIG. 7**

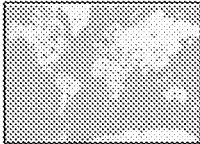


**Clinton Dewitt Firestone IV**

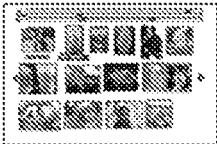
Birth: July 12, 1896  
Death: April 29, 1971  
Parents: [Clinton Dewitt Firestone III](#) and [Viola Miller](#)  
Comments: He was a WWII U.S. Air force pilot and POW in WWII and veteran honorably discharged in December of 1947. He worked for 44 years for the Firestone Tire and Rubber Company in retail, wholesale and original equipment sales, marketing and management. He was born in Akron, OH and is buried in Columbiana, OH.

[Edit bio](#)

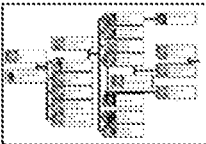
Locations



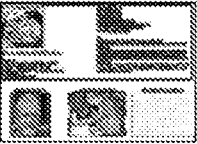
Timeline



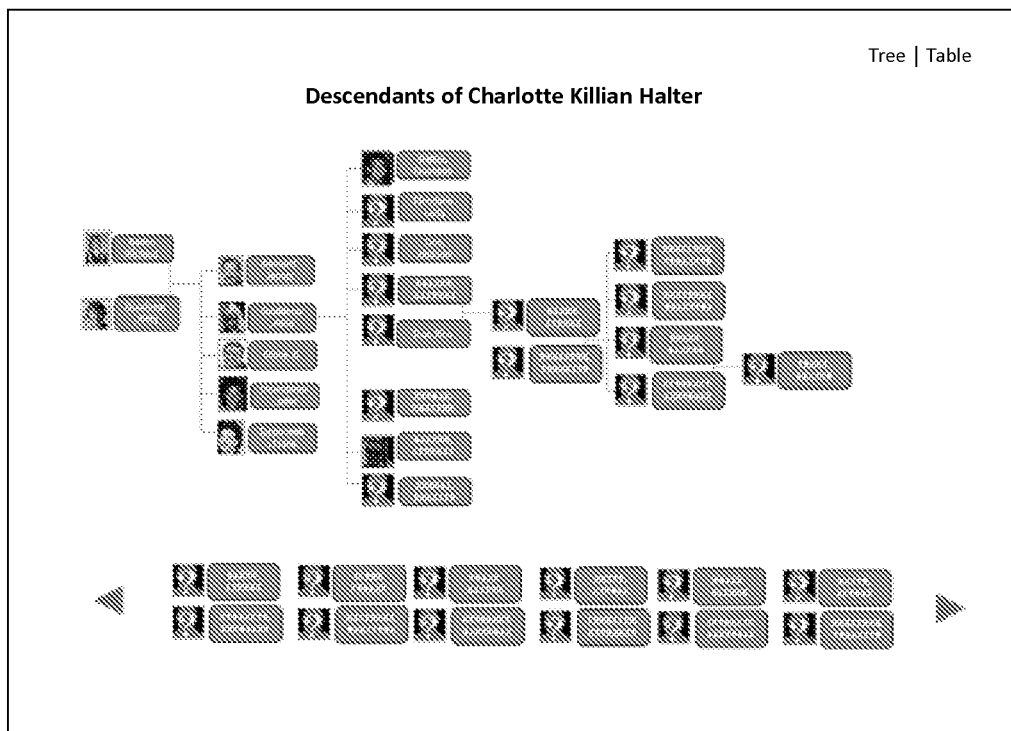
Family Tree



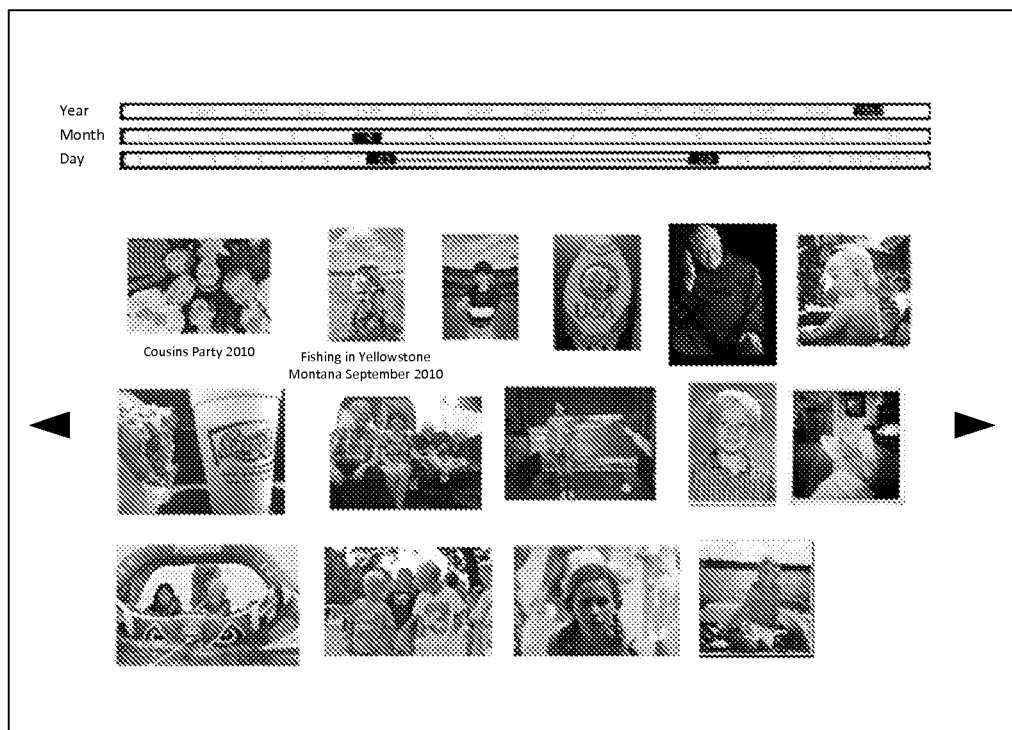
Recipes

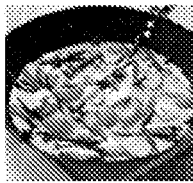


**FIG. 8**



**FIG. 9**



**FIG. 10**

Desmond's Yellow Thai Chicken Curry

## Curry Mix

- Coconut milk (400 ml) – DO NOT SHAKE IT UP
- 800 gram of chicken (4 chicken breast)
- Fish sauce (Nam Pla) Thai Bamboo Garden – Bottle
- Garlic (2 cloves)
- Broccoli ( 2 cups chopped)
- 2 Peppers (chopped)
- 2 Carrots (chopped)

- 1 Zucchini (chopped)
- Thai Basil (8 leaves)
- Lemon Grass (in jar) 1 teaspoon
- Chinese Ginger Root (in jar) 1 teaspoon

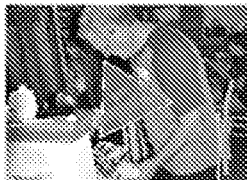
## Rice

- Thai Rice (something that only takes 2 cups of water)
- Dice chicken in bowl and add two tablespoons of fish sauce. Let marinate for 20 minutes.
- Take thick part of coconut milk out into pan (about 4 tablespoons), Curry paste, 1 spoon of lemon grass, 1 spoon of ginger and garlic. Heat over high with boil and THEN stir for 1 minute. Add meat (uncooked) and fry until cooked over high heat
- Add milk, brown sugar and salt. Bring back to slight boil and constantly stir. Add veggies and soy sauce. Cook for about 10-14 minutes COVERED until veggies are cooked. Serve with a smile.

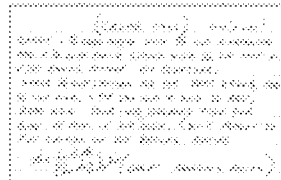
Chef: Barry Desmond



Video on How to Make It



Original Handwritten Recipe



**FIG. 11**

Thumbnail | Table

Album/Event	Date	Location	# Photos	# Videos	# Docs
Jack Monk's Arrival	26-Dec-2003	Chicago, IL	69	4	4
Mike Testy's First Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Jack Monk's Arrival	29-Dec-2003	Chicago, IL	69	4	4
Mike Testy's 2nd Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Jack Monk's Arrival	29-Dec-2003	Chicago, IL	69	4	4
Mike Testy's 3rd Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Jack Wrigley Monk's Arrival	29-Dec-2003	Chicago, IL	69	4	4
Mike Testy's 4th Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Nancy Learns How to Ride a Bike	21-Jul-1978	St. Louis, MO	76	2	0

**FIG. 12**



Thumbnail | Table

Album/Event	Date	Location	# Photos	# Videos	# Docs
Jack Monk's Arrival	26-Dec-2003	Chicago, IL	69	4	4
Mike Testy's First Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Jack Monk's Arrival	29-Dec-2003	Chicago, IL	69	4	4
Mike Testy's 2nd Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Jack Monk's Arrival	29-Dec-2003	Chicago, IL	69	4	4
Mike Testy's 3rd Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Jack Wrigley Monk's Arrival	29-Dec-2003	Chicago, IL	69	4	4
Mike Testy's 4th Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Nancy Learns How to Ride a Bike	21-Jul-1978	St. Louis, MO	76	2	0





**U.S. Patent****Sep. 24, 2019****Sheet 13 of 50****US 10,423,658 B2****FIG. 13**

Thumbnail | Table

Last Name	# People	# Photos	# Videos	# Docs
+ Alberts	2	8	0	0
+ Annex	2	7	0	0
+ Bade	3	8	0	0
+ Bacon	4	8	0	0
+ Bates	5	7	1	0
+ Boone	6	6	2	2
+ Danas	7	5	4	1
+ Danes	8	7	3	2
- Monk (All)	2	499	4	14
 Monk, CJ	1	200	2	7
 Monk, Jack	1	199	2	7
+ Firestone	21	1249	17	39
+ Moore	1	4	6	3
+ Slythe	1	9	0	9
+ Stein	2	249	1	3
+ Testy	4	788	2	12

**FIG. 14**

Thumbnail | Table

Last Name	Relationship	# Photos	# Videos	# Docs
Alberts, John	Cousin	8	0	0
Killian, Jack	Son	7	0	0
Killian, Brian	Nephew	8	0	0
Killian, Kevin	Nephew	8	0	0
Killian, Sarah	Daughter-in-law	7	1	0
Killian, John	Great Nephew	6	2	2
Killian, Mark	Great Nephew	5	4	1
Killian, Louis	Great Grandson	7	3	2
Killian, John	Grandson	499	4	14
 Monk, CJ	Great Grandson	200	2	7
 Monk, Jack	Great Grandson	199	2	7
Firestone, Mike	Third Cousin	1249	17	39
Moore, Bertha	Great Niece	4	6	3
Slythe, Sarah	Sister	9	0	9
Killian, John	Brother	249	1	3
Killian, Mike	Brother	788	2	12

**FIG. 15**

Thumbnail | Table

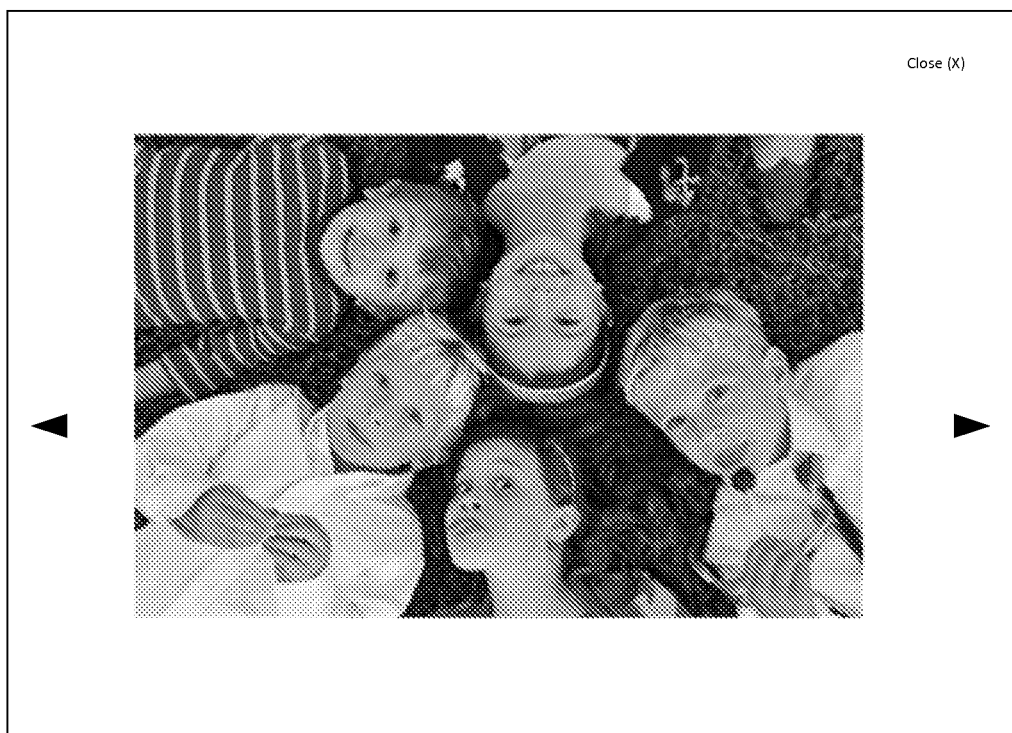
Location Name	Address	City	State	Country	# Photos	# Videos	# Docs
Dom		Cologne		Germany	3	2	0
Lucilla & Roberto		Montalcino		Italy	6	1	0
Lisle Home	898 West St	Lisle	IL	USA	45	12	2
College	545 Market	Akron	OH	USA	64	2	0
Amazon Trip		Manus		Brazil	235	8	2
Cabin	999 Pine	Lake Geneva	WI	USA	98	2	0
Grad School	903 Plymouth	Charleston	IL	USA	1256	32	4
Griffith Park	298 Glencarin	Los Feliz	CA	USA	12	0	0
LA Equestrian Ctr	568 Horse Dr	Glendale	CA	USA	4	4	0
Del Coronado	12 Coronado Dr	Coronado	CA	USA	321	4	0
Fenway Park	123 Yawke	Boston	MA	USA	57	3	5
Wrigley Field	1190 W Addison	Chicago	IL	USA	498	7	3
Home	444 Main	Anywhere	IL	USA	10,987	49	9
GA Grill Party	321 Silver	Macon	GA	USA	15	0	0
Pike's Market	786 Market	Seattle	WA	USA	18	1	0
Raffels	345 Fong	Singapore		Singapore	23	2	0

**U.S. Patent****Sep. 24, 2019****Sheet 16 of 50****US 10,423,658 B2****FIG. 16**

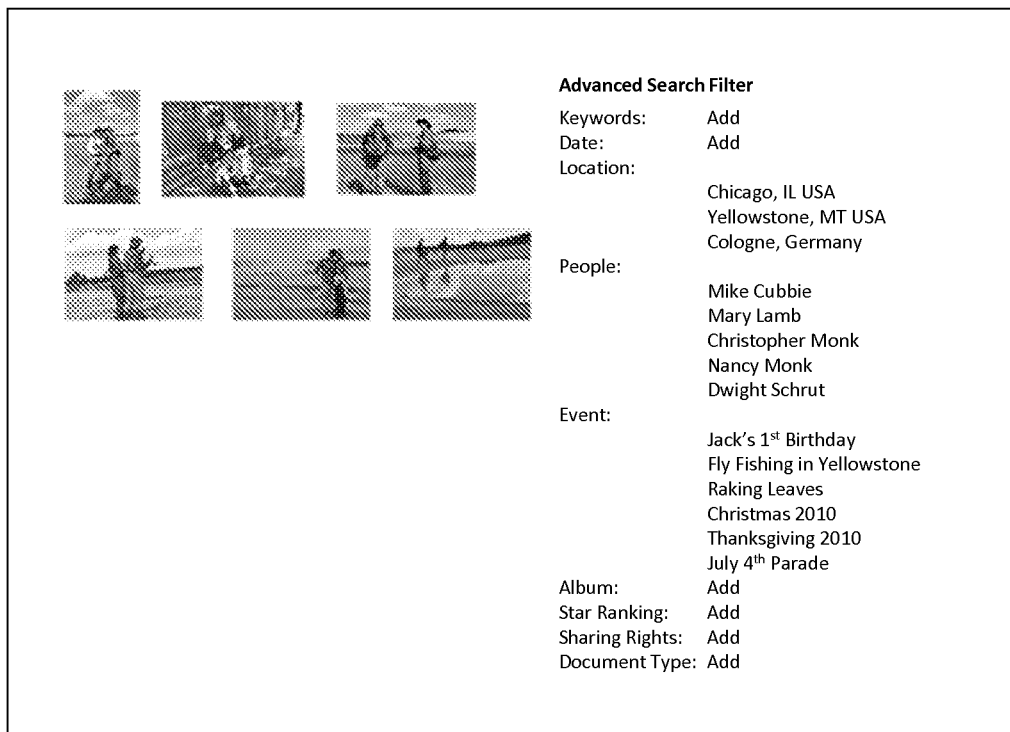
Category | Card | Table

Recipe	Chef	Date	Category
Blacks Yellow Thai Chicken Curry	Jack Black	31 Jan 2010	Dinner
Skinny Germans	Gerda	29 Dec 2003	Breakfast
KFC in a Bag	The Kernal	13 Sept 1988	Anytime
Shit on a Shingle	George James	5 Aug 1998	Anytime
Mrs. Fields Cookies	Mrs. Fields	21 July 1978	Dessert
Chicken Pot Pie	Jack Black	31 Jan 2010	Dinner
Roll Your Own Dough	Vito Spadavecchio	29 Dec 2003	Dinner
Pizza ala Franciscan	Charles Faso	13 Sept 1988	Dinner
Meatball Delight	Ben Delight	5 Aug 1998	Dinner
Almond Cookies	Lori James	21 July 1978	Dessert
Jumpin Jack Flap Jacks	Jack Jack	31 Jan 2010	Breakfast
Vicki's Chow Mein	Vicki Firestone	29 Dec 2003	Dinner
Fat Steak	Barry Monk	13 Sept 1988	Dinner
Mud Pie	Nancy Monk	5 Aug 1998	Dessert
Caesar Salad	Christopher Monk	21 July 1978	Anytime
Daddio Pancakes	Barry Monk	2 March 2011	Breakfast

**FIG. 17**



**FIG. 18**



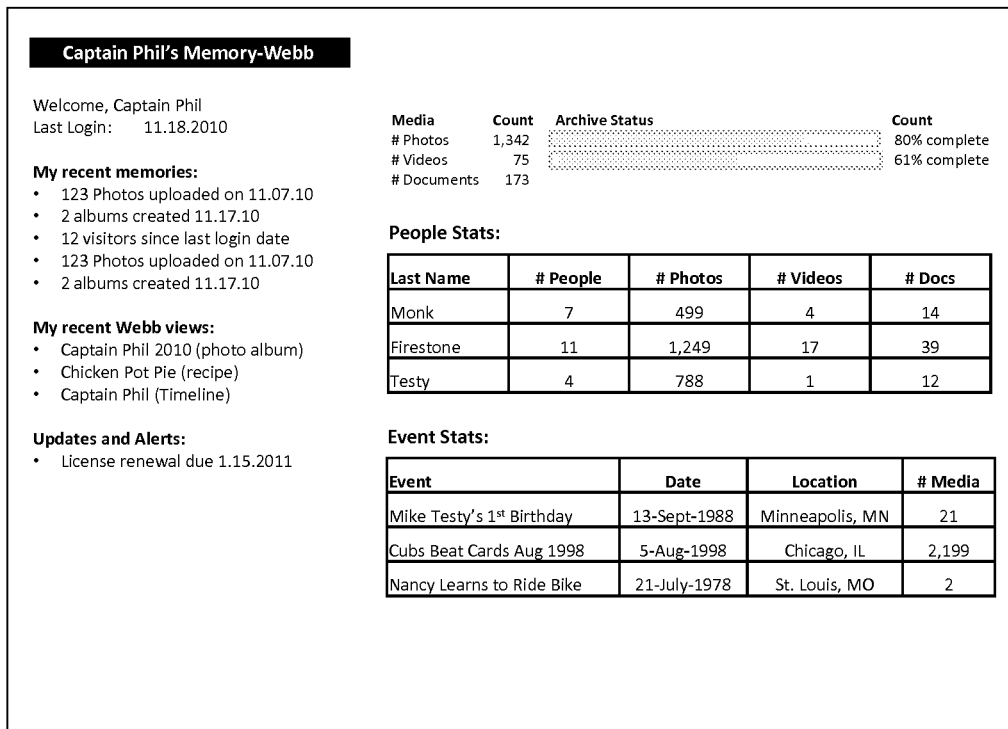
**FIG. 19**

FIG. 20

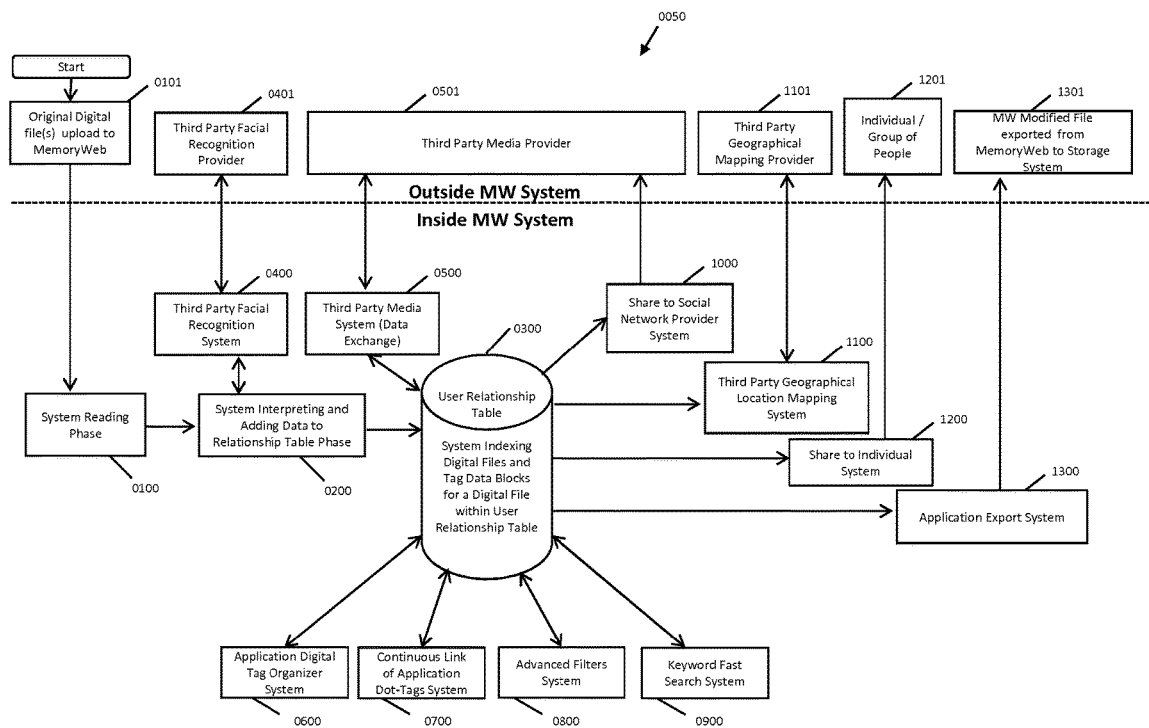
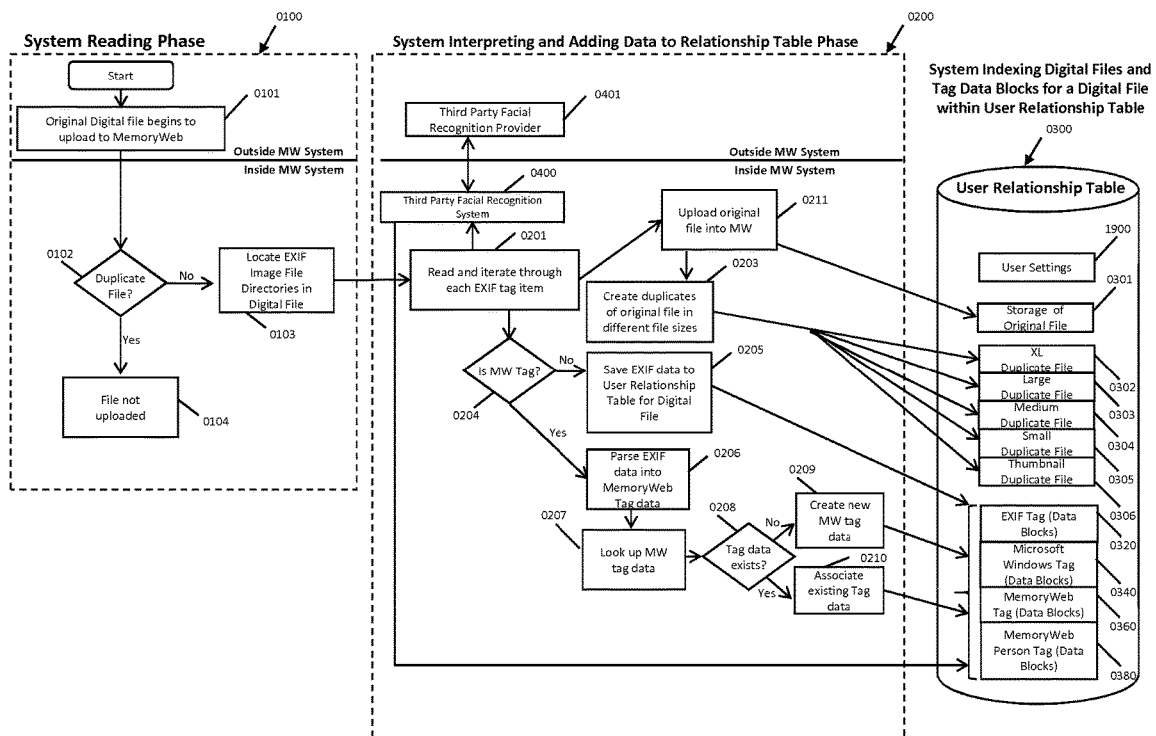


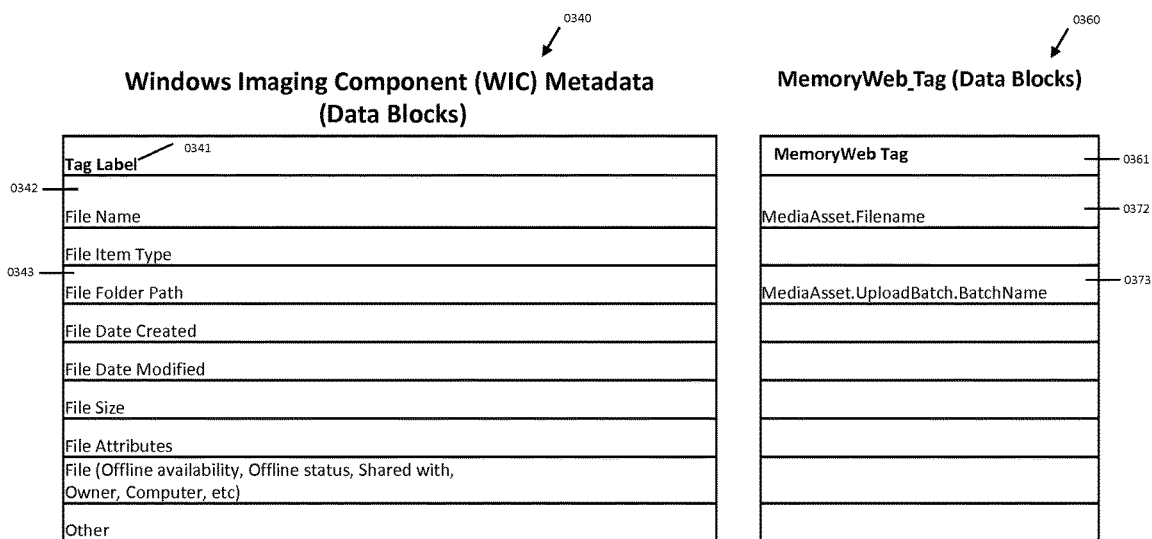


FIG. 21



**FIG. 22**

EXIF Tags version 2.3 Image File Directories (Data Blocks)			MemoryWeb_Tag (Data Blocks)	
Tag Labels	EXIF Family Group Name	Location	MemoryWeb_Tag	
Description Title	IFD0	0x9c9b or 0x010e	MediaAsset.Caption	
Description Subject	IFD0	0x9c9f		
Description Rating		N/A	MediaAsset.StarRanking	
Description Tags	IFD0	0x9c9e		
Description Comments	IFD0	0x9c9c		
Origin Authors	IFD0	0x9c9d		
Origin Date Taken	ExifIFD	0x9003	MediaAsset.DateCreated	
Origin Date Acquired		N/A		
Origin Copyright	IFD0	0x8298		
Image (Image ID, Dimensions, Width Height, etc)		Multiple		
Width		0xbc80	MediaAsset.Width	
Height		0xbc81	MediaAsset.Height	
Camera (Camera Maker, Camera Model, etc)		Multiple		
Advanced Photo (Lens Maker, Lens Model, etc)		Multiple		
User Comment	ExifIFD	0x9286	This is used to inject information that do not currently have EXIF standardized tags including Collection, People, Location Name, Recipe Name, Person Tag Data Blocks (0380), etc.	
GPS Latitude	GPS	0x0002	MediaAsset.Location.Latitude	
GPS Latitude Ref	GPS	0x0003	MediaAsset.Location.Latitude	
GPS Longitude	GPS	0x0004	MediaAsset.Location.Longitude	
GPS Longitude Ref	GPS	0x0005	MediaAsset.Location.Longitude	
GPS Altitude	GPS	0x0006		

**FIG. 23**

**FIG. 24**

0380  
↓

**MemoryWeb\_Person Tag (Data Blocks)**

Person Name	0395
Nickname	0381
Birthdate	0382
Date of Death	0383
Biography	0384
Mother	0385
Father	0386
Brother 1 , Brother 2, ...	0387
Sister 1 , Sister 2, ...	0388
Daughter 1 , Daughter 2, ...	0389
Son 1 , Son 2. ...	0390
Spouse 1 , Spouse 2, ...	0391
Facial Recognition Data (Taylor?)	0392
Facebook ID	0393
pets	0394
...	0396

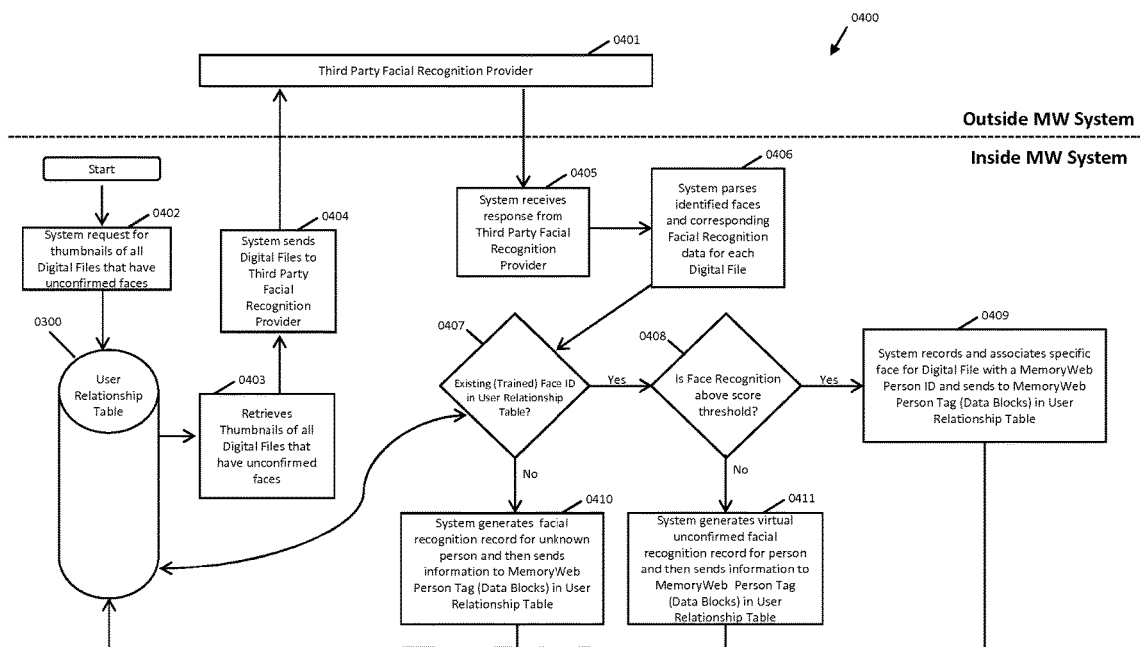
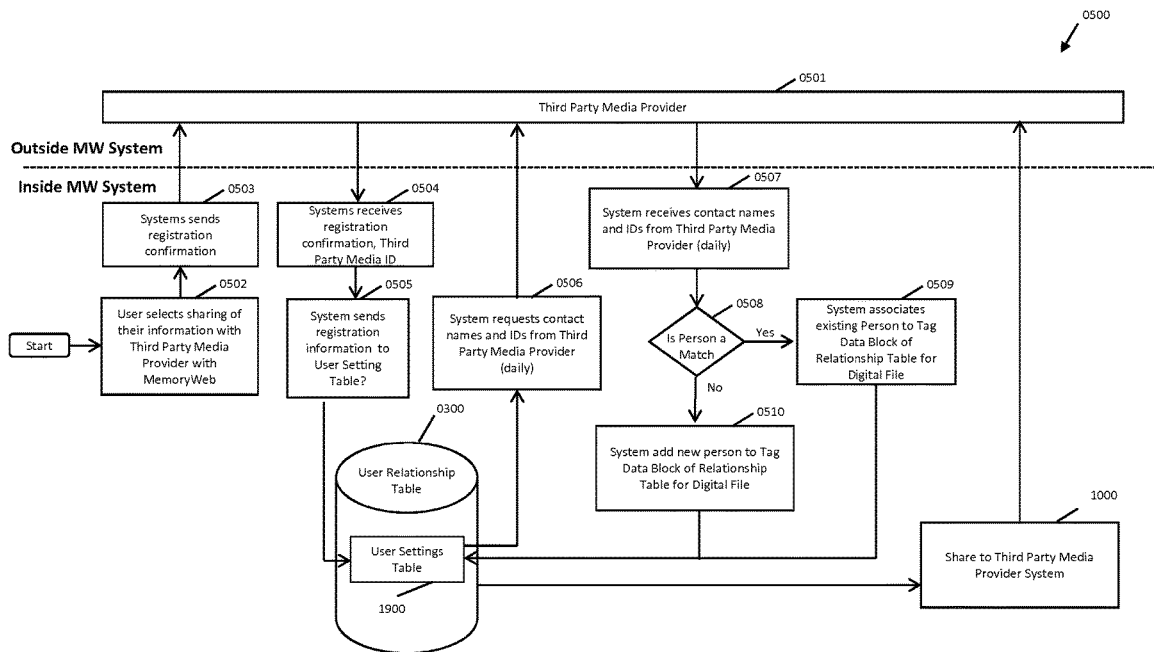
**FIG. 25**

FIG. 26



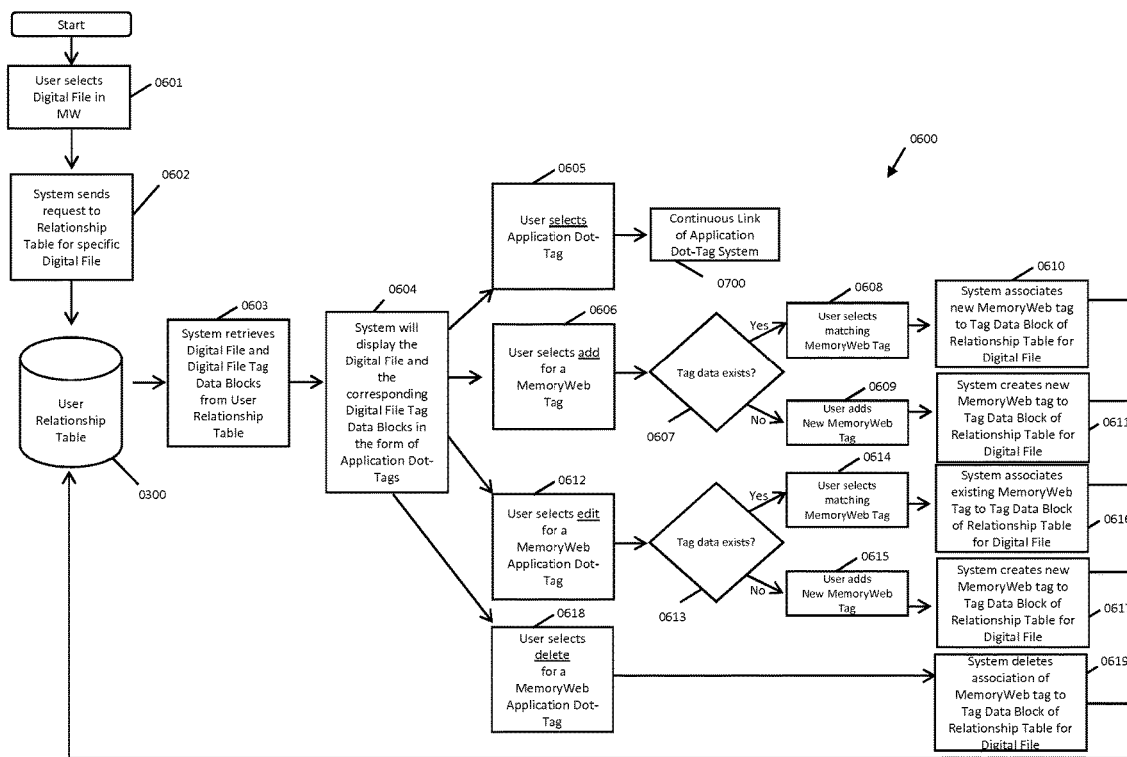
**FIG. 27**

1900

Item

1901	User's Name
1902	Payment ID
1903	Password
1904	Account Type
1905	User's email
1906	Language preference
1907	Date format
1908	Email notifications
1909	Contacts (with third Party Social Media)
1910	Facebook ID
1911	API Token
1912	Payment Date
1913	...

FIG. 28





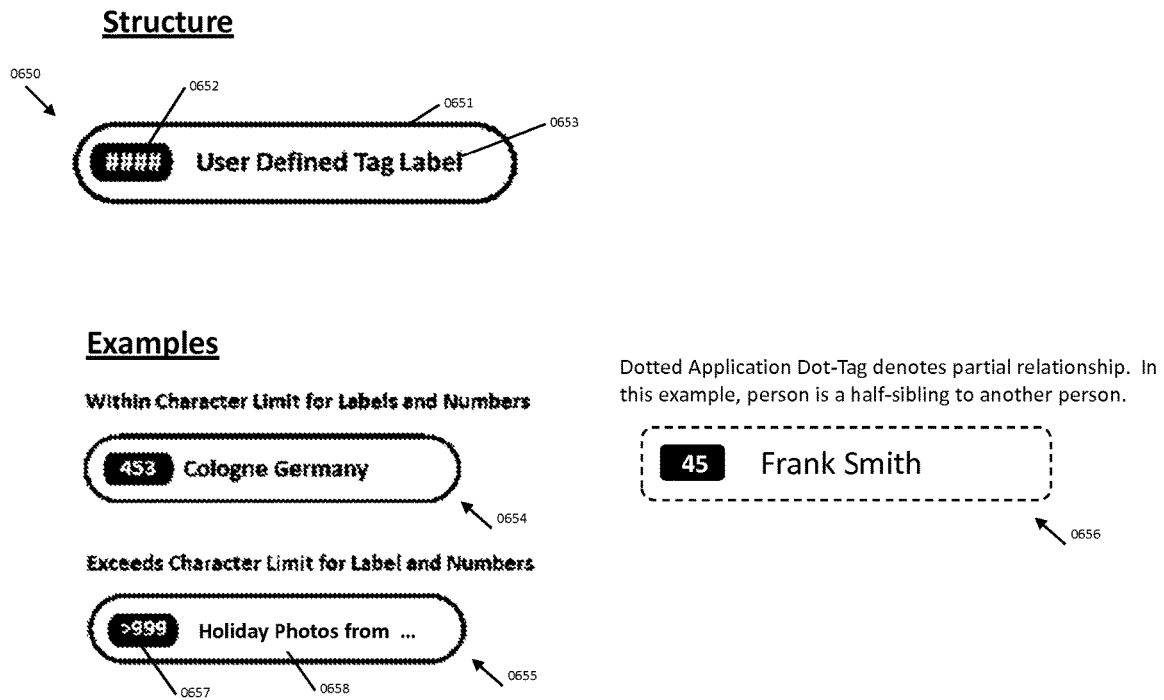
**FIG. 29**

FIG. 30

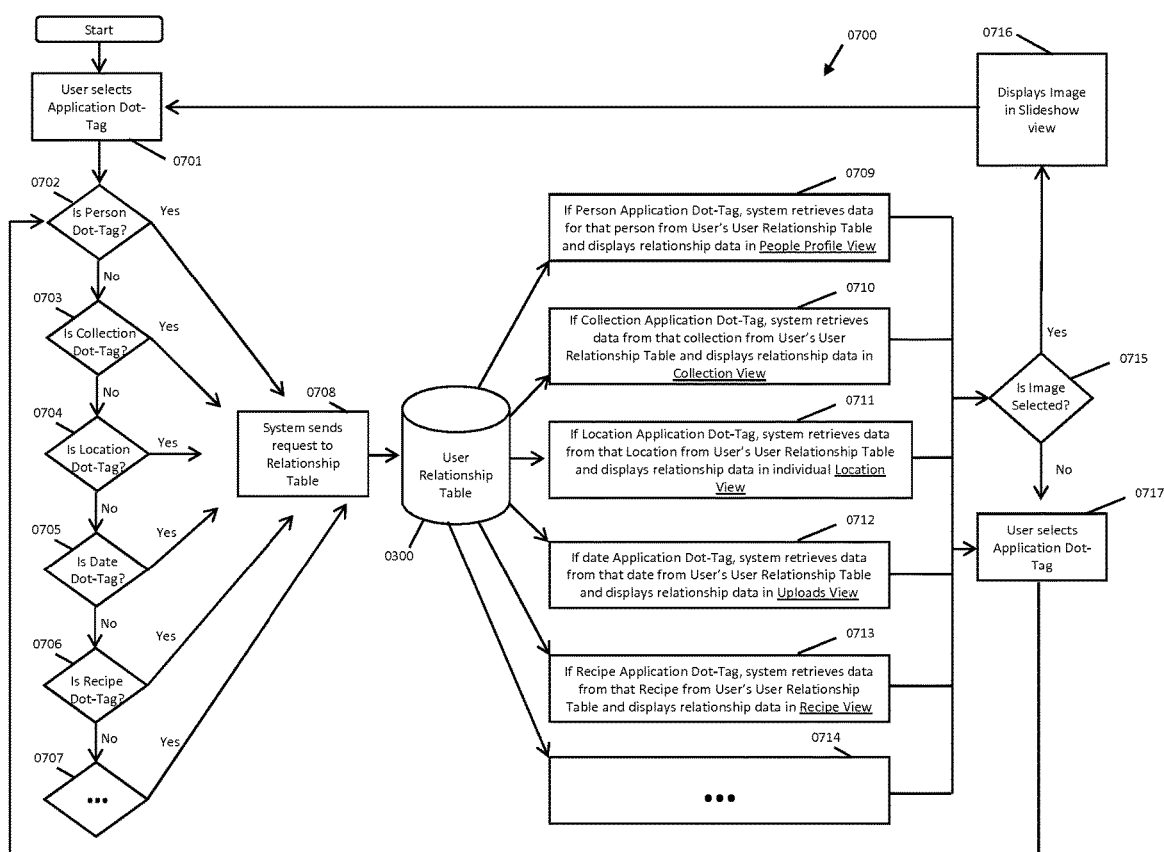


FIG. 31

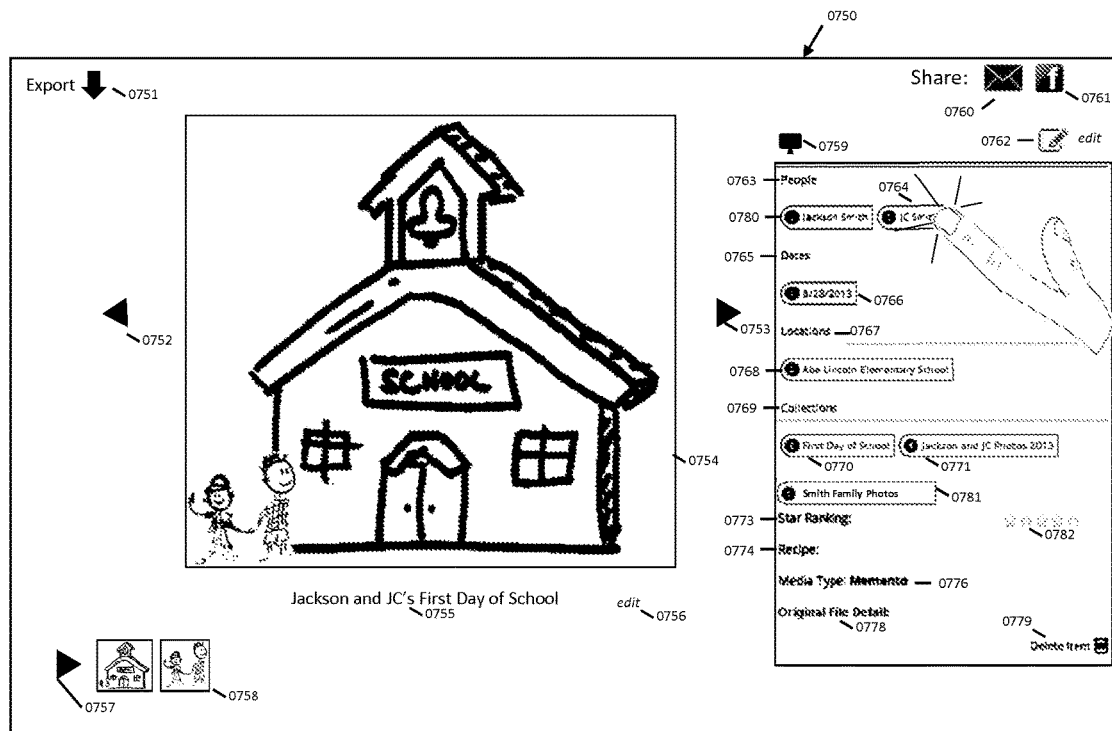
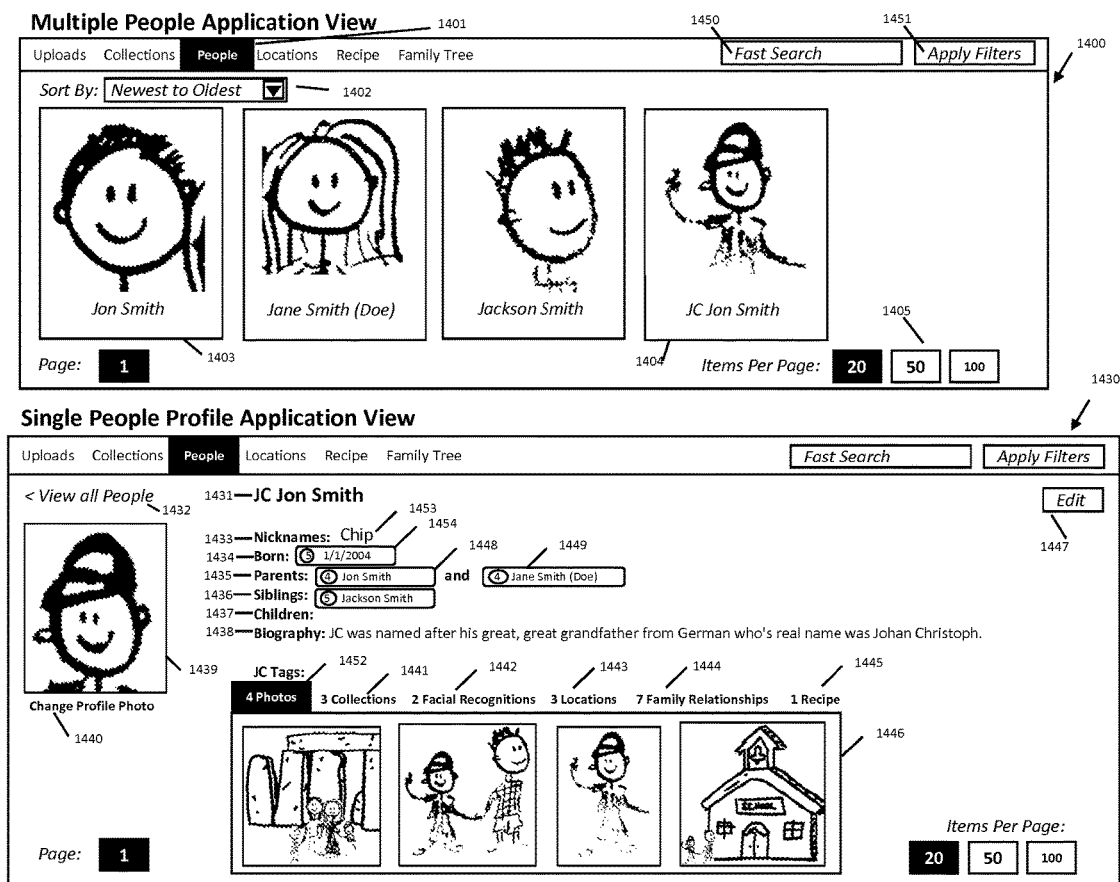


FIG. 32



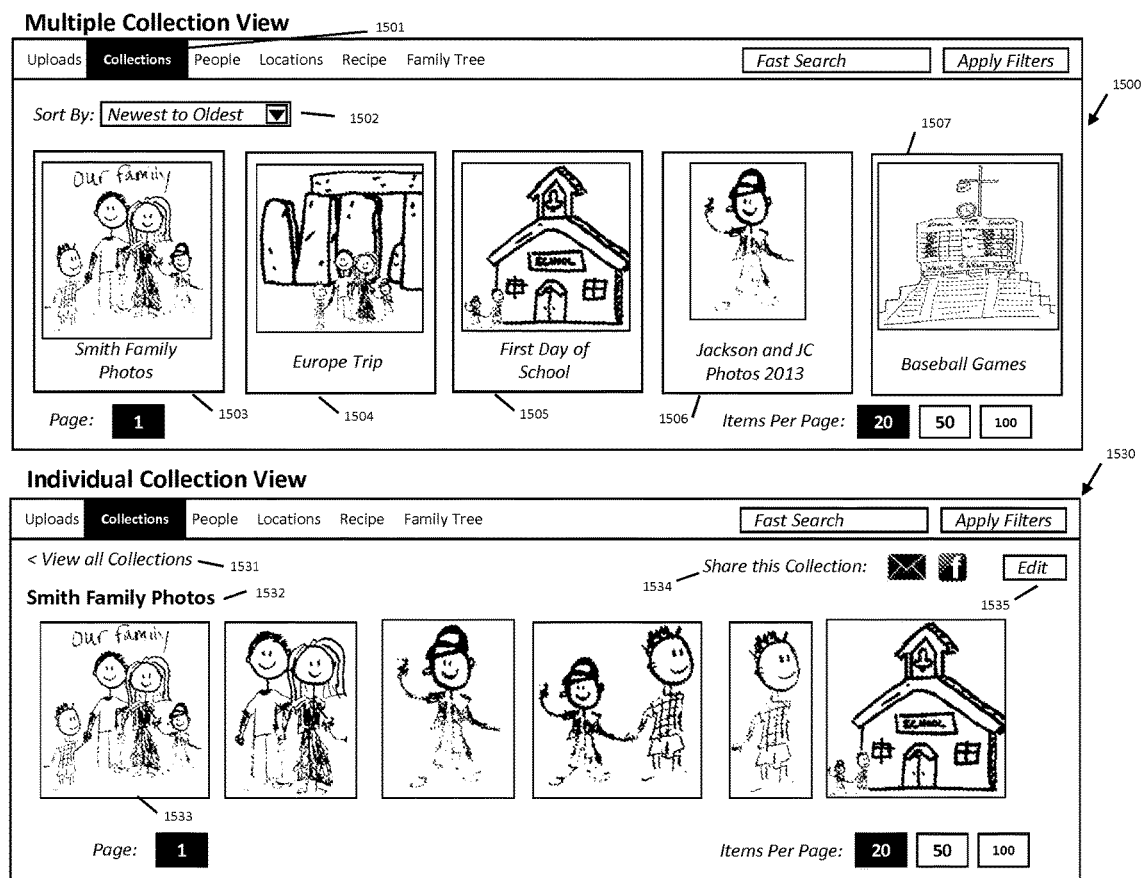
**FIG. 33**

FIG. 34

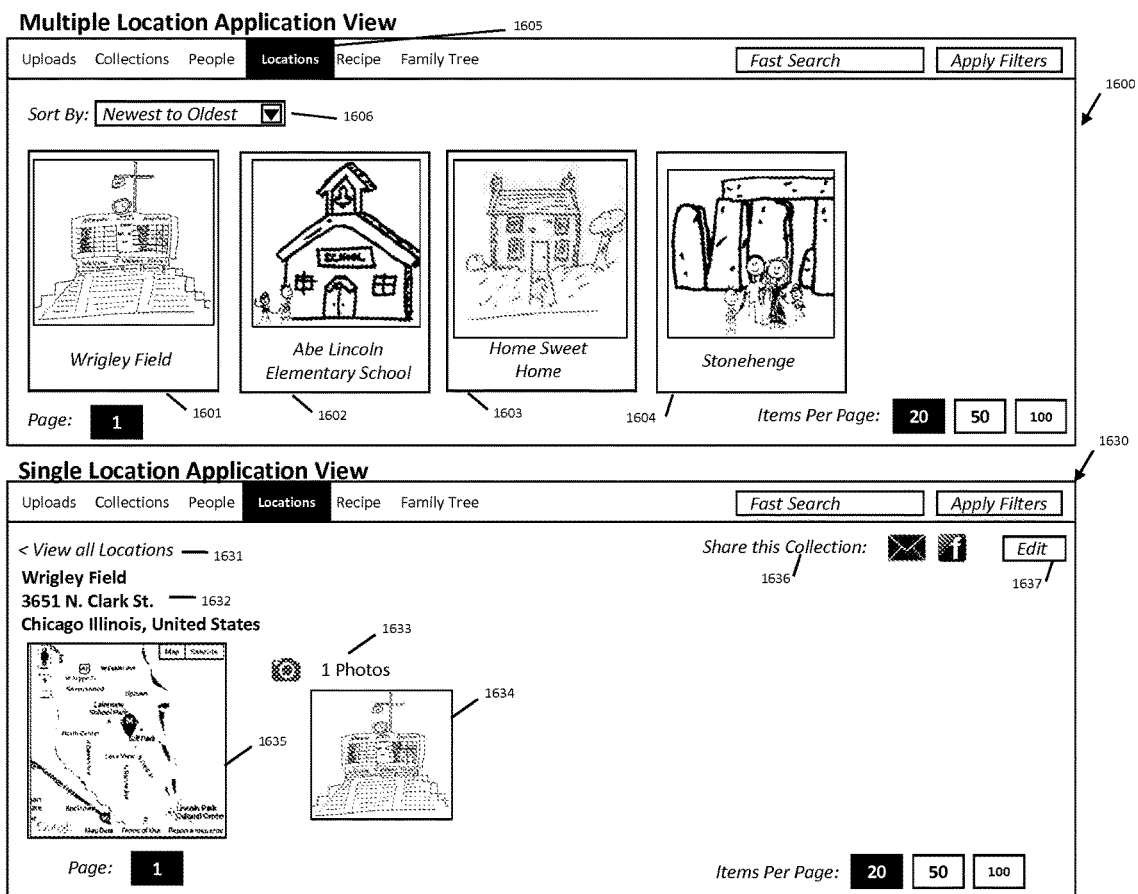


FIG. 35

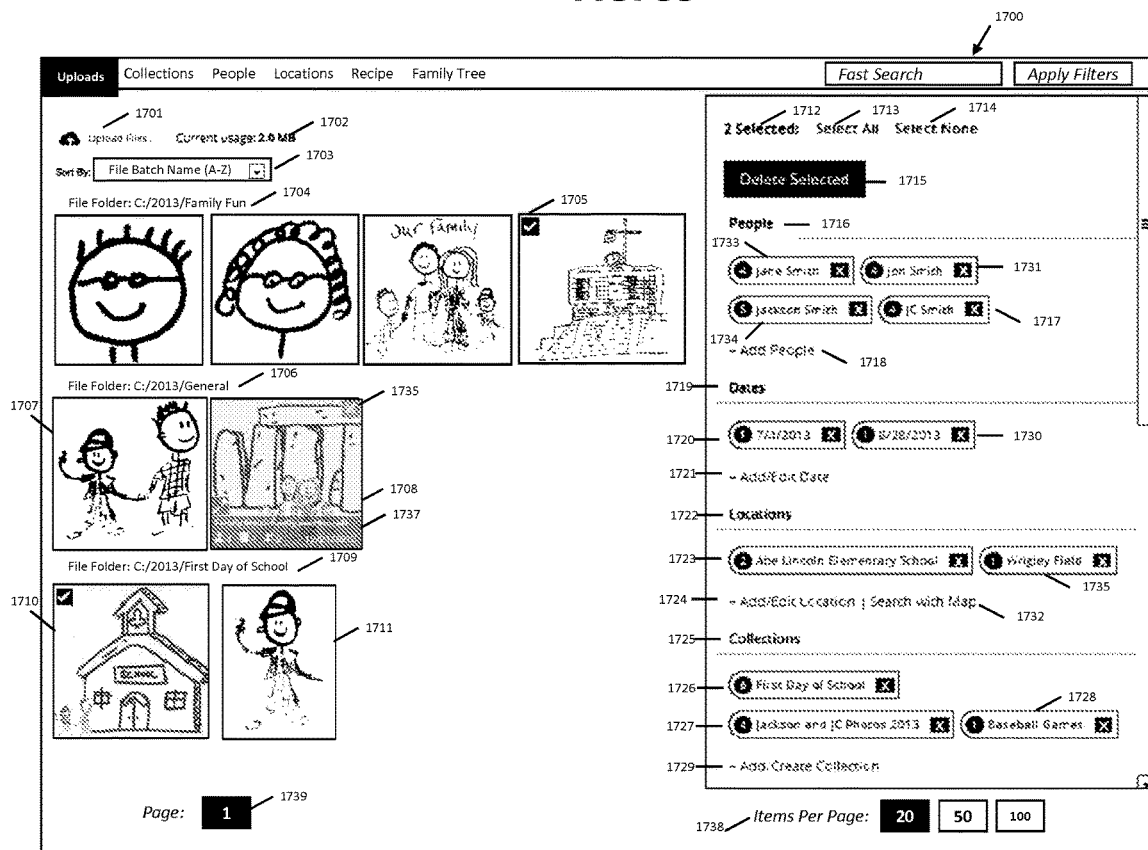


FIG. 36

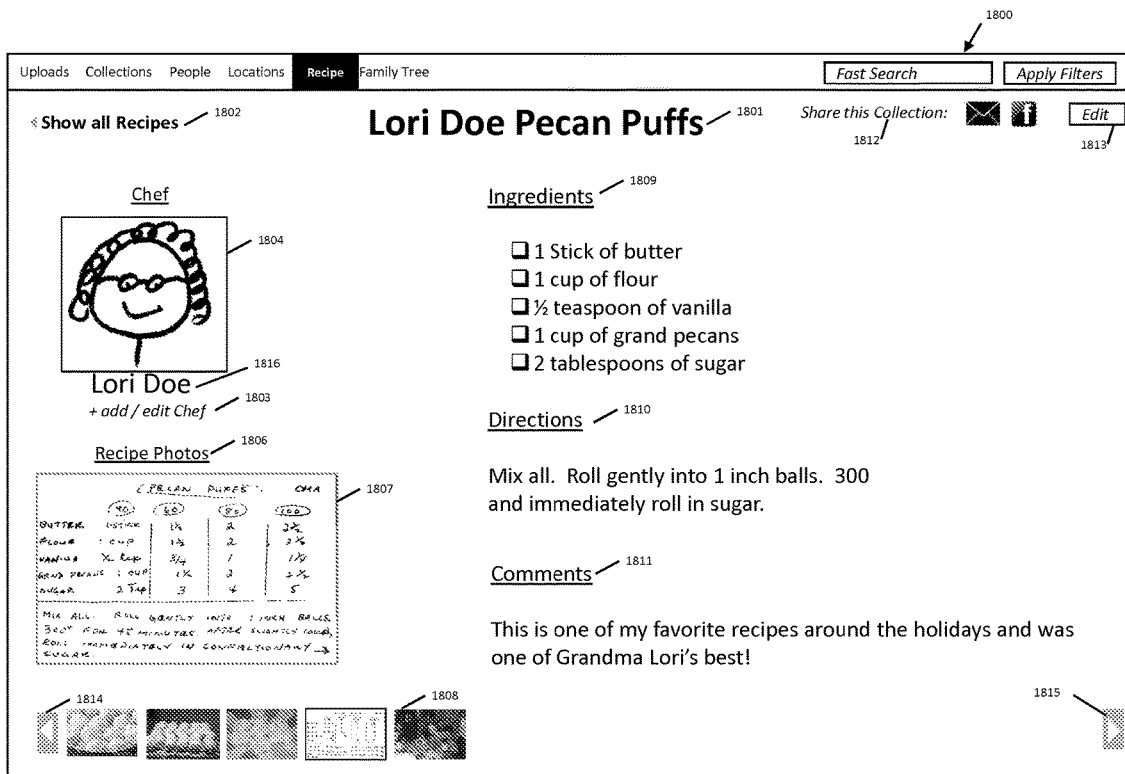




FIG. 37

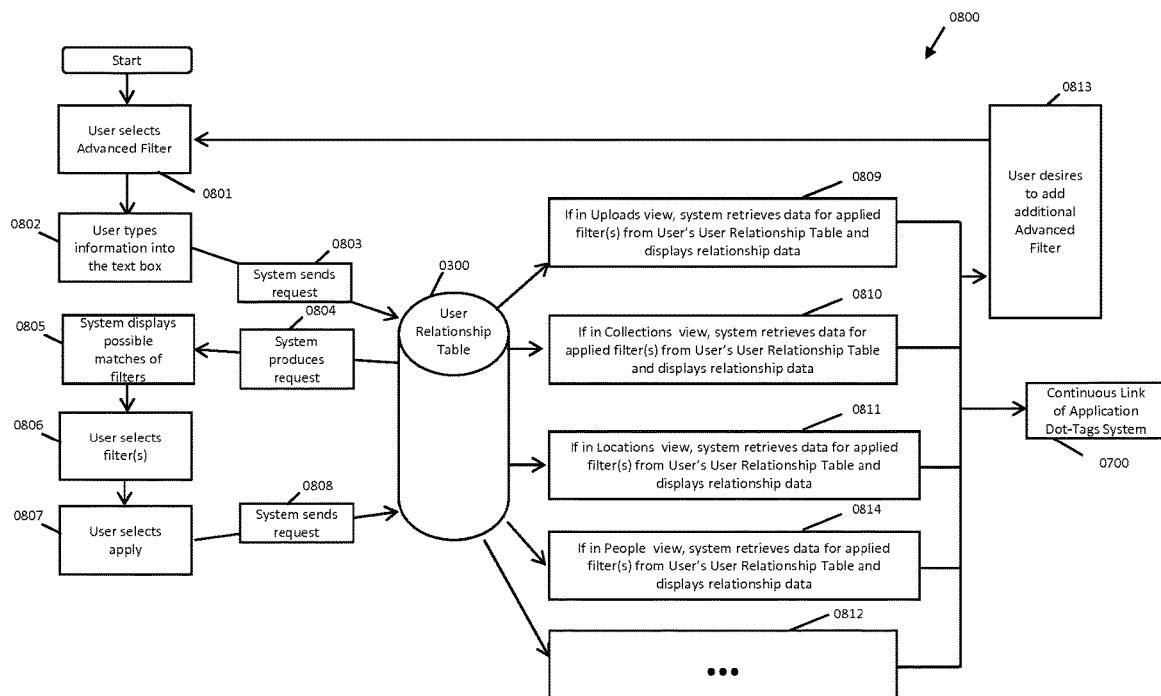


FIG. 38

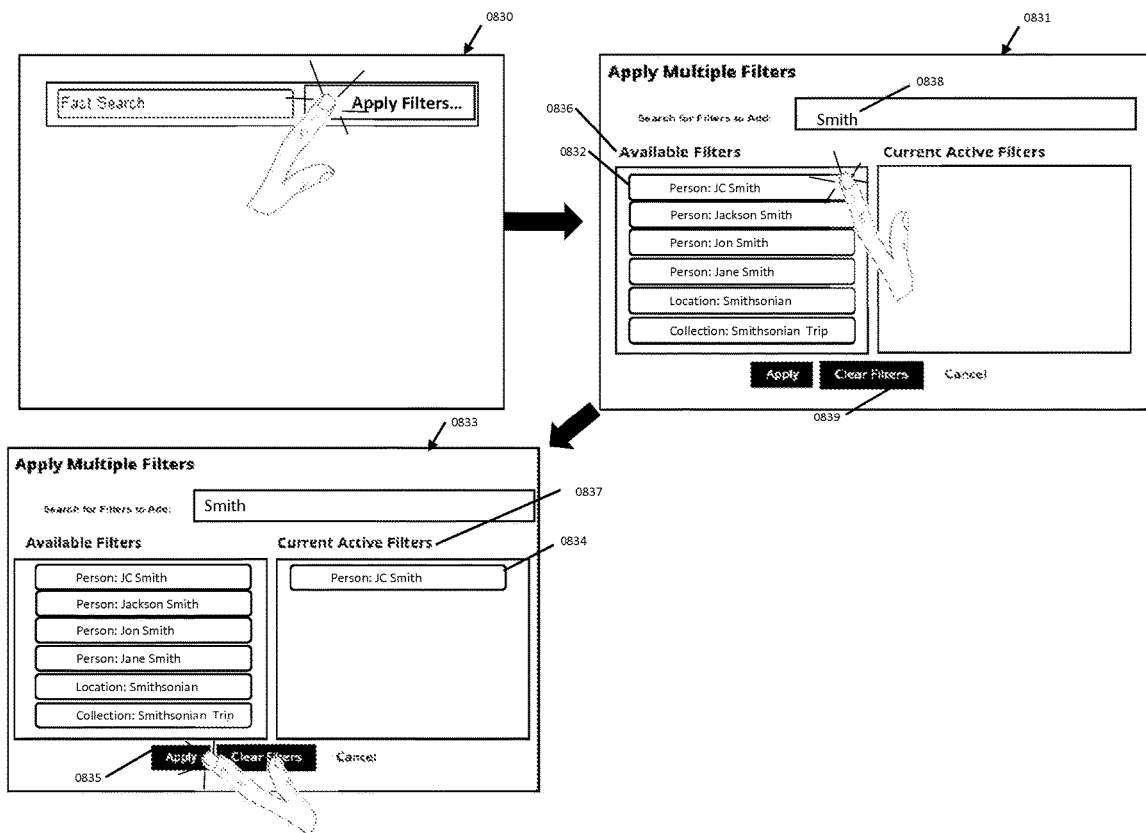
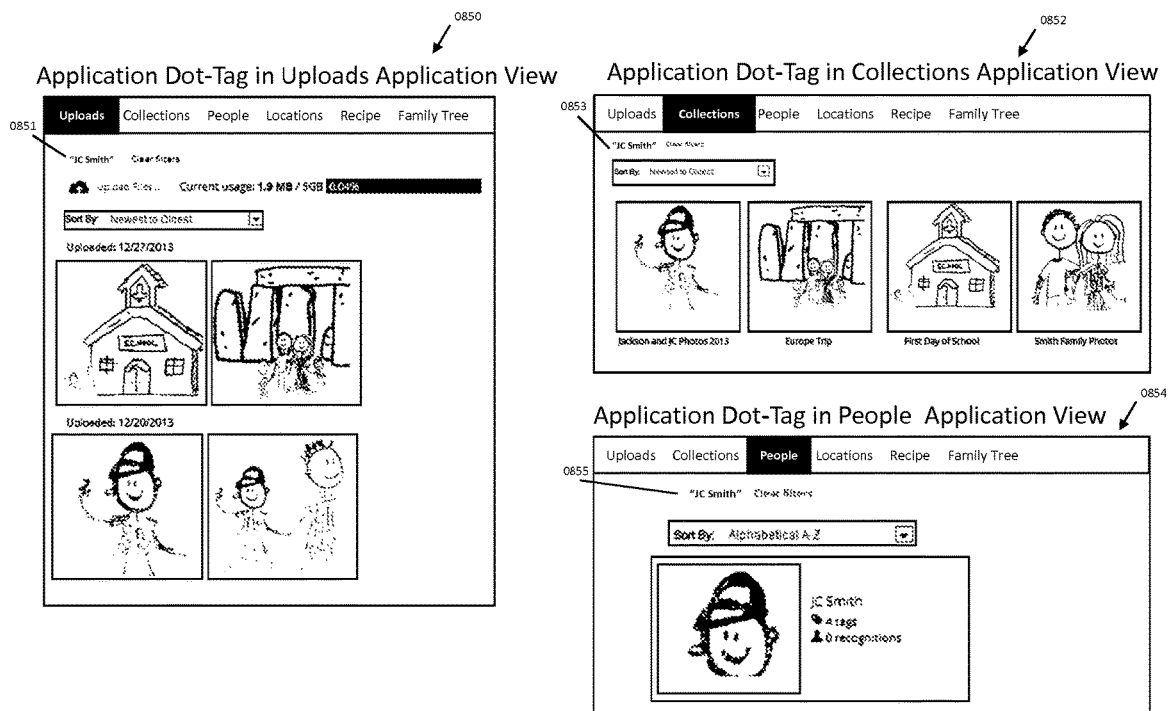


FIG. 39



U.S. Patent

Sep. 24, 2019

Sheet 40 of 50

US 10,423,658 B2

FIG. 40

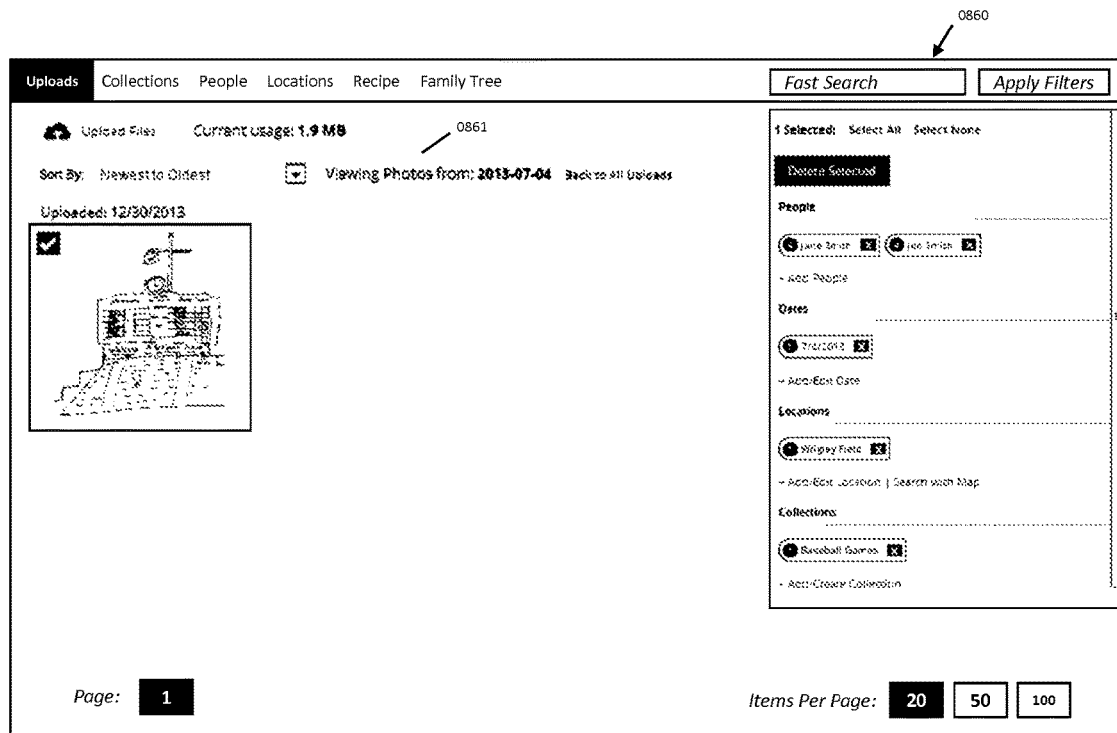


FIG. 41

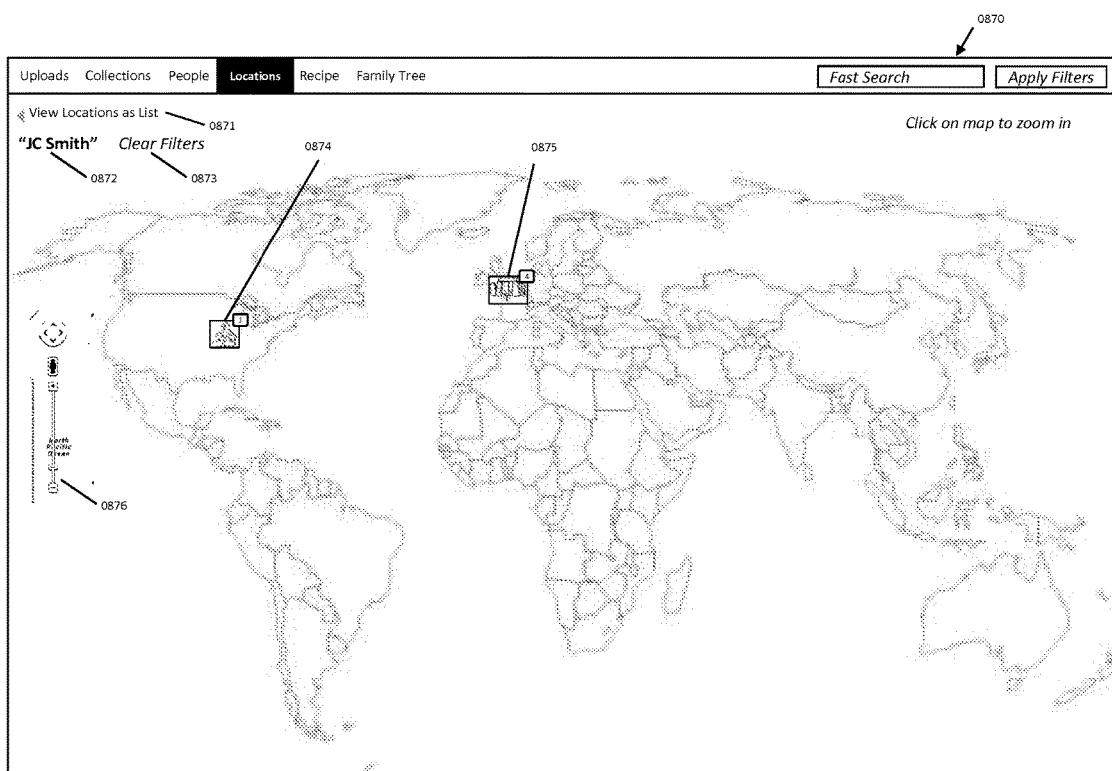


FIG. 42

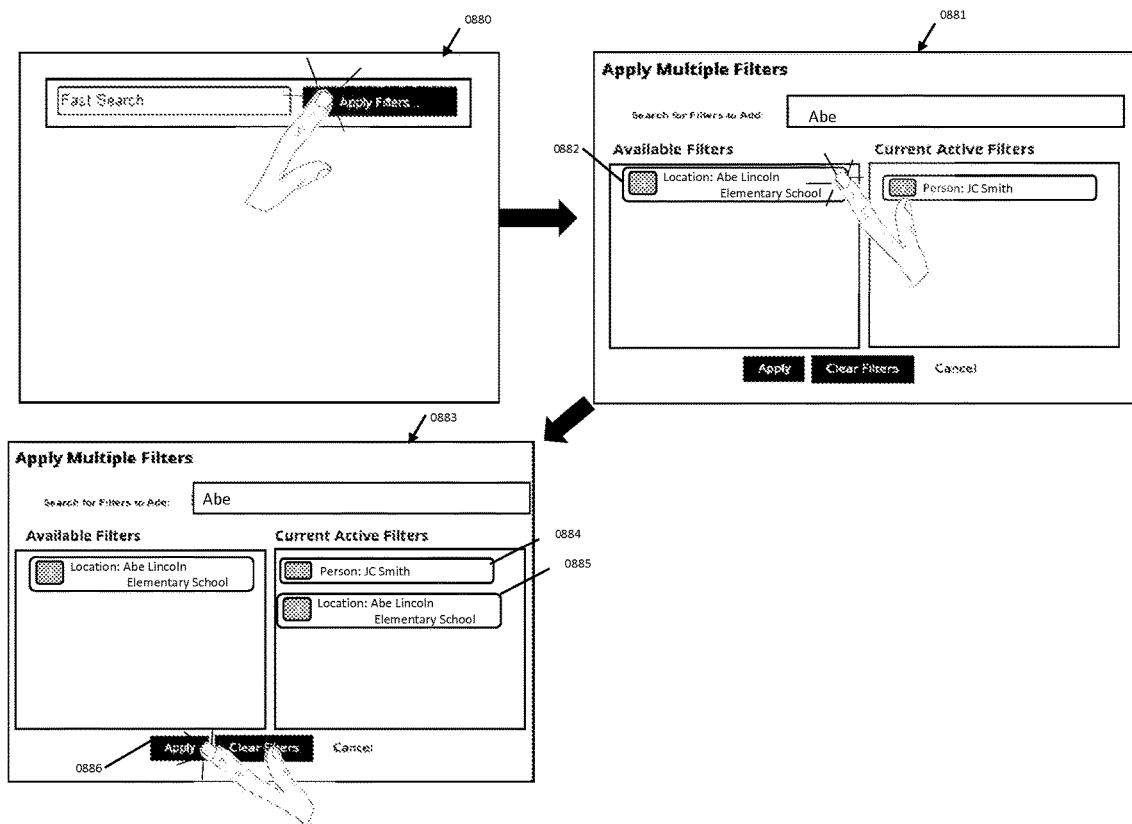
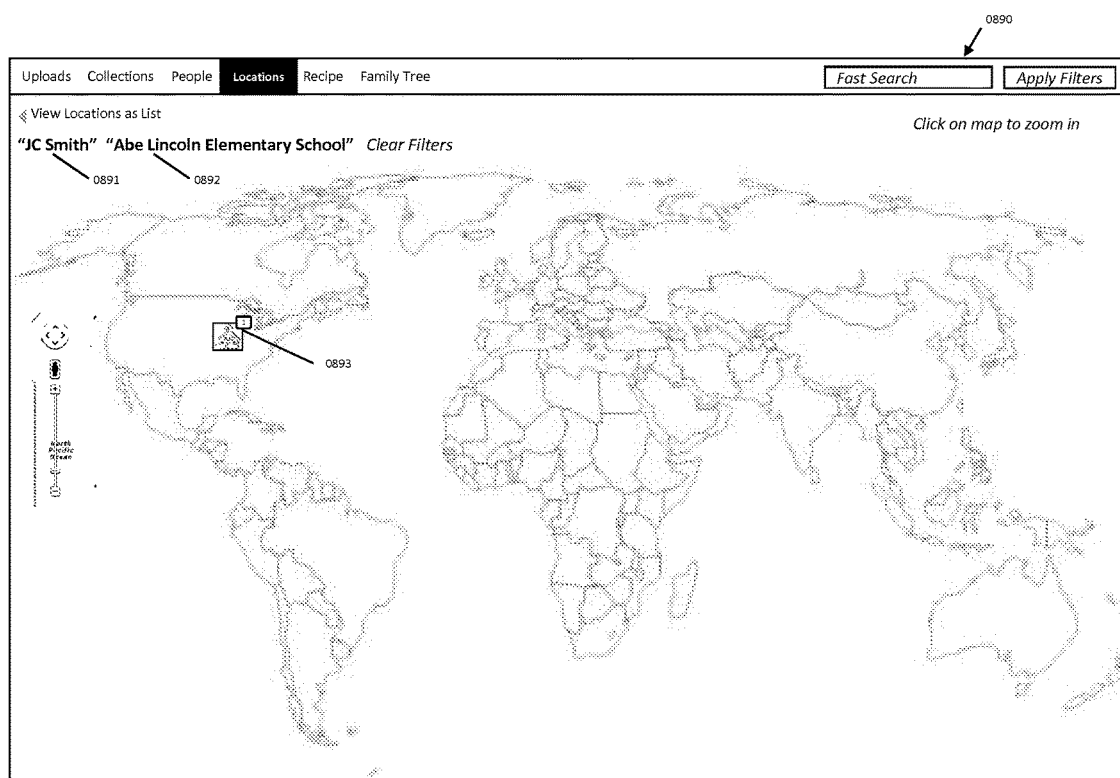


FIG. 43



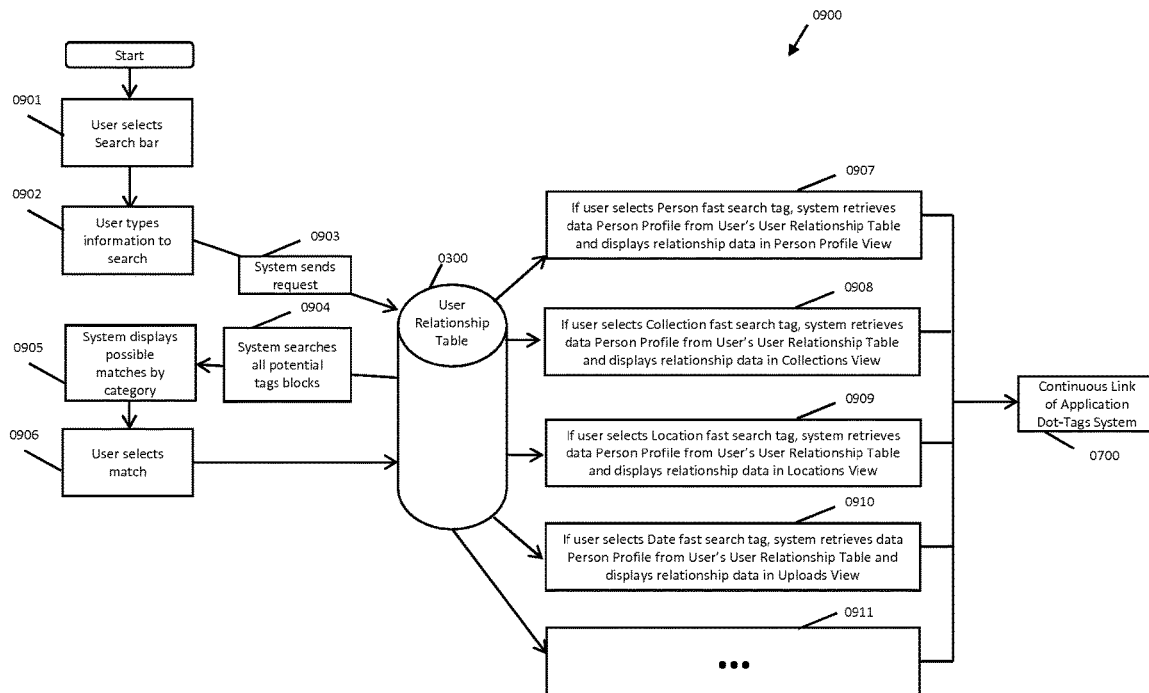
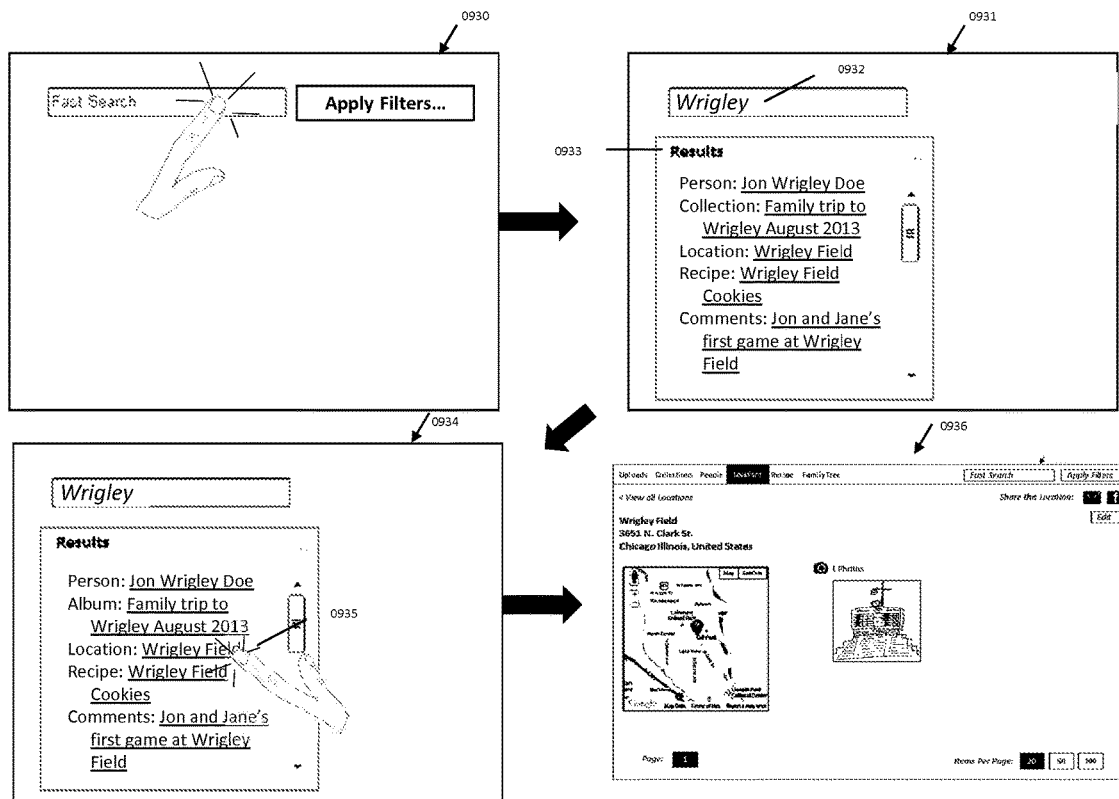
**FIG. 44**



FIG. 45



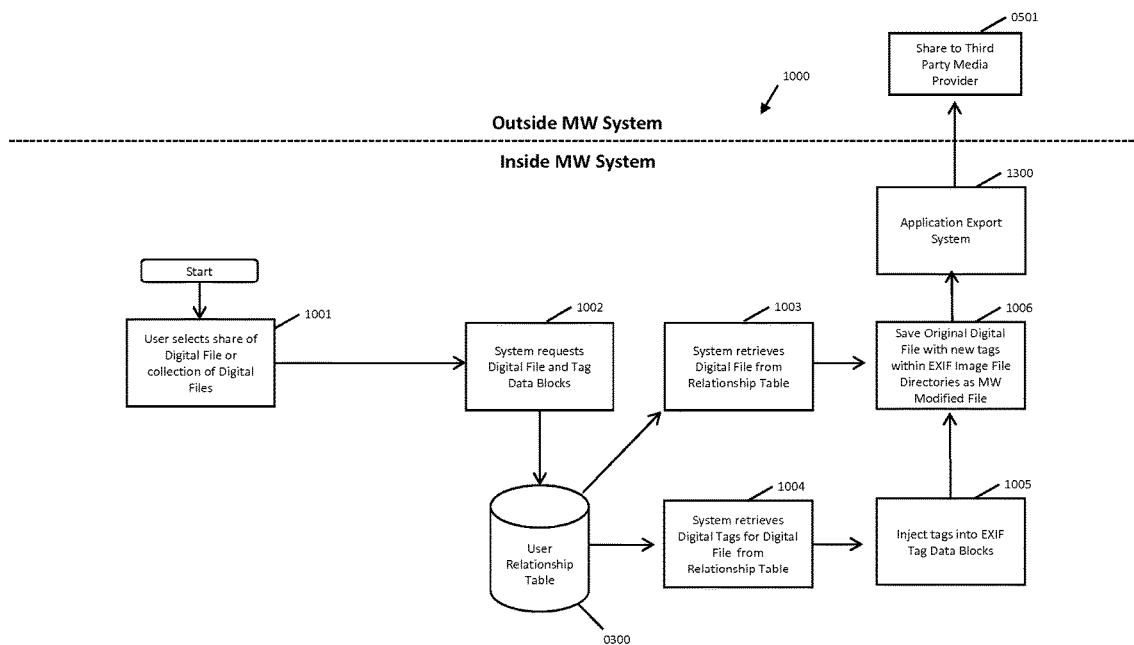
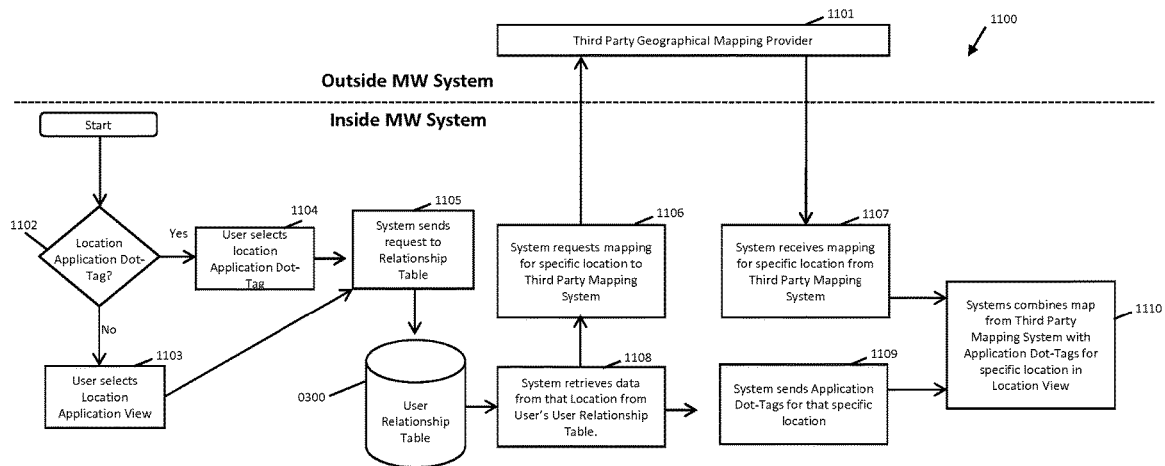
**FIG. 46**

FIG. 47



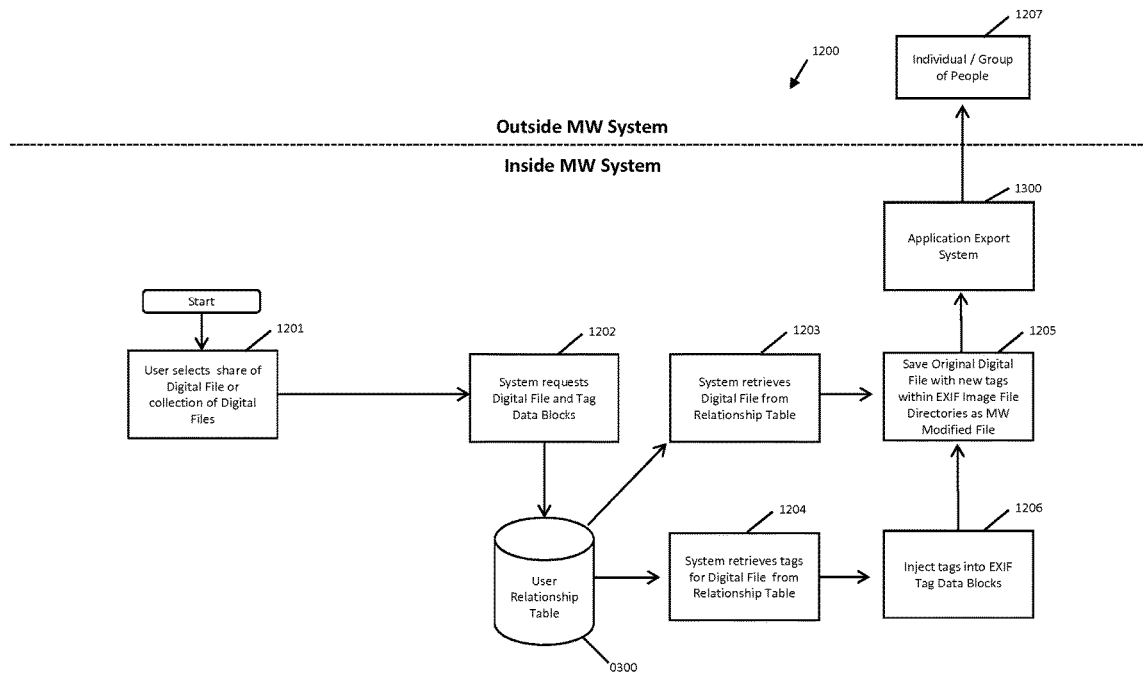
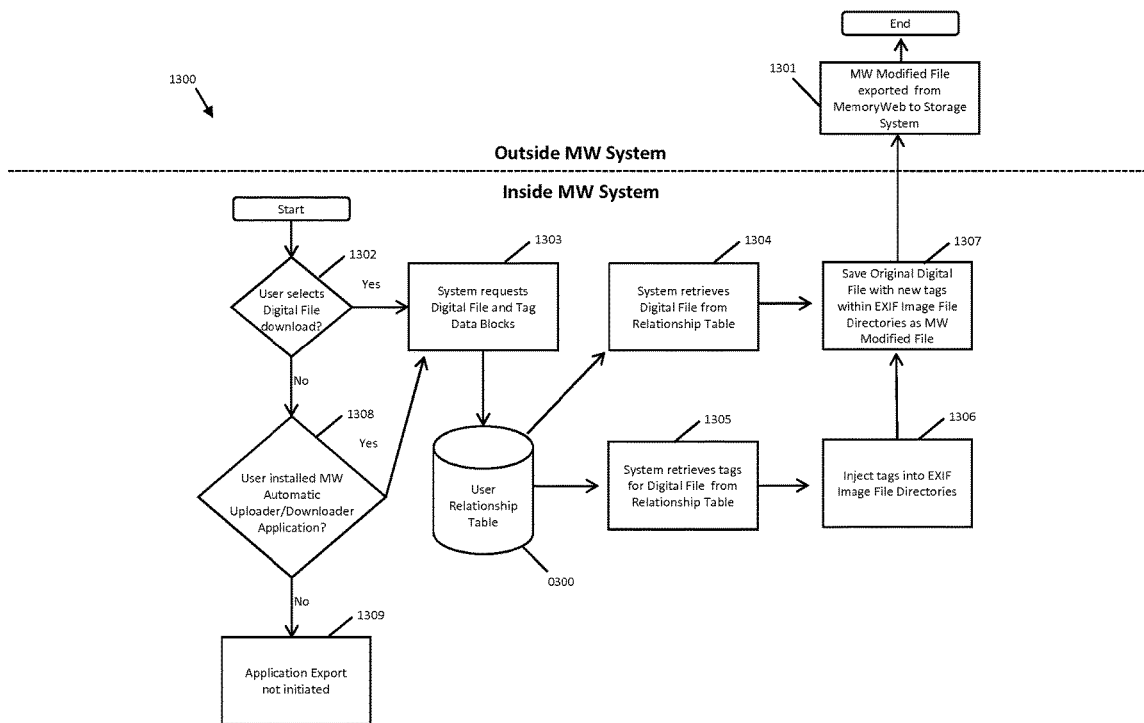
**FIG. 48**

FIG. 49



U.S. Patent

Sep. 24, 2019

Sheet 50 of 50

US 10,423,658 B2

FIG. 50

Sample EXIF Image File Directories and Exiftool family 1 group names		Original File EXIF Tag Data		MW Modified File Tag Data	
Description Title					
Description Subject					
1404	Description Rating	1416		1410	*****
Description Tags					
1405	Description Comments	1417		1411	CAPTION: Jackson and JC's first day at school! PERSON: Jackson Smith, JC Smith LOCATION NAME: Abe Lincoln Elementary School COLLECTION: First Day of School COLLECTION: Jackson and JC Photos 2013 DATE: 8/28/2013
Origin (Authors, Date Taken, Date Acquired, Copyright)					
Image (Image ID, Dimensions, Width, Height, etc.)					
Camera (Camera Maker, Camera Model, etc.)					
Advanced Photo (Lens Maker, Lens Model, etc.)					
1406	GPS Latitude	1418		1412	39; 46; 4.3774999999999999
1407	GPS Longitude	1419		1413	89; 39; 55.3199999999999953
File Name		IMG_3826.JPG		IMG_3826.JPG	
File Item Type		JPG		JPG	
1408	File Folder Path	C:\Photos\2013 1420		1414	C:\Photos\MW Backup\2013
1409	File Date Created	11/01/2013 10:00 AM 1421		1415	08/28/2013 8:00 AM
File Date Modified					
File Size		2.42 MB		2.42 MB	
File Attributes		A		A	
File (Offline availability, Offline status, Shared with, Owner, Computer, etc.)					

US 10,423,658 B2

1

**METHOD AND APPARATUS FOR  
MANAGING DIGITAL FILES****CROSS-REFERENCE TO RELATED  
APPLICATIONS**

This application is a continuation of U.S. patent application Ser. No. 14/193,426, filed Feb. 28, 2014, now allowed, which is a continuation-in-part of and claims priority to U.S. patent application Ser. No. 13/157,214, filed Jun. 9, 2011, now U.S. Pat. No. 9,098,531, each of which is hereby incorporated by reference herein in its entirety.

**FIELD OF THE INVENTION**

The present invention relates generally to the management of digital files and, more particularly, to a computer-implemented system and method for managing and using digital files such as digital photographs.

**BACKGROUND OF THE INVENTION**

Prior to the invention of digital photography, people tended to share photos by displaying printed copies in frames and albums, or would store them in a container in hope of preserving these assets for future use or future generations. Important photos would often be inscribed on the back with significant details (people, location, event, etc.) to preserve the memory of that particular occasion. Many people would share their memories by assembling an album that could be viewed with others. Occasionally, extra copies of special photos were printed for friends, relatives, etc. At one time, film slide shows were also a popular medium for sharing photo memories.

With the evolution of digital files, there has been explosive growth in the number of individuals taking digital photos, converting old photos to digital copies, making movies and gathering digital documents and in the sheer number of files people are capturing digitally. Today, virtually every personal computing device contains some kind of photo, movie or other type of digital file creator/player/viewer/storer/etc.

At the same time, there is little to no cost for people to store large amounts of photos in various “containers” of the modern age. Facebook, Flickr, Shutterfly and countless other social media and specialty digital files sites allow users to post and share images to a community with a frequency and ease that continues to feed the fire of the digital revolution. However, they don’t allow much organization of digital tags, dynamic viewing of digital files, and the ability to export the digital files with new digital tags. Questionable and ever-changing privacy terms for user/account information, including digital files, have also left the marketplace leery of posting their full digital archive and associated context to these sites.

What is needed to complement the widespread availability of digital files is a medium that allows people to organize, view, preserve and share these files with all the memory details captured, connected and vivified via an interactive interface. Such a solution would allow digital files, including documents, photos, videos and audio, to tell a full story now, and for generations to come.

**SUMMARY**

In accordance with one embodiment, a computer-implemented method of associating digital tags with digital files

2

comprises (1) storing, on one or more non-transitory computer-readable storage media, a plurality of digital files, each of the digital files having embedded therein content data and metadata including tags; (2) receiving, via a user interface device of a client device, a first tag label containing alphanumeric text created and inputted by a user of the client device; (3) modifying, using a controller device, a selected first one of the tags of the metadata in a first of the digital files to include the first tag label; (4) receiving, via the user interface device or another user interface device, an instruction to search for all of the digital files having at least the first tag label; (5) responsive to receiving the instruction, automatically searching for all of the digital files having at least the first tag label; and (6) displaying, on a video display device associated with the client device, a first indication of the first tag label.

In another embodiment a computer-implemented method of associating digital tags with digital files comprises storing, on one or more non-transitory computer-readable storage media, a plurality of digital files, each of the digital files having a content data portion and a metadata portion including tags; displaying, on a video display device associated with a client device, a first graphical representation of a first tag label of a first of the tags and associated with a first of the digital files; receiving, via a user interface device of the client device, a selection by a user of the client device of the first graphical representation of the first tag label as a search filter criterion or a search string entered via the user interface device corresponding to the first tag label; responsive to the receiving, automatically searching through the digital files, using at least the first tag label as a search filter, for the digital files satisfying at least the search filter criterion; and displaying, on the video display device, an indication of the first tag label and a representation of the number of the digital files satisfying at least the search filter criterion.

In accordance with a further embodiment, a web-based digital file storage system comprises a digital file repository for storing and retrieving digital files; a digital tagging system permitting the user to assign a plurality of digital tags to each of the digital files, wherein the digital tagging system comprises at least one type of data selected from the group consisting of a person’s name, a location, a recipe, a date, a family relationship, a person’s profile, an event name, a rating, and a document type; a search filter, wherein the search filter allows the digital files to be searched according to a plurality of types of data; and a user interface that presents the digital files on a user’s screen based on the digital tags, wherein the user interface further comprises a digital tag image, the digital tag image having at least one type of data represented thereon with text.

As described in detail below, the various embodiments provide much-needed platforms that save a user significant time, provide significant information with minimal screen space, and provide an appealing and customizable interface that will enhance the user experience.

**BRIEF DESCRIPTION OF THE DRAWINGS**

The invention may best be understood by reference to the following description taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a screenshot of an organizational functionality view of one embodiment of the disclosed system.

FIG. 2 is a screenshot of a photo detail view of one embodiment of the disclosed system.

FIG. 3 is a screenshot of a gallery view of an event or album of one embodiment of the disclosed system.

## US 10,423,658 B2

3

FIG. 4 is screenshot of an individual event or album view of one embodiment of the disclosed system.

FIG. 5 is a screenshot of a location view of one embodiment of the disclosed system.

FIG. 6 is a screenshot of a people thumbnail view of one embodiment of the disclosed system.

FIG. 7 is a screenshot of a people profile view of one embodiment of the disclosed system.

FIG. 8 is a screenshot of a family tree view of one embodiment of the disclosed system.

FIG. 9 is a screenshot of a timeline view of one embodiment of the disclosed system.

FIG. 10 is a screenshot of a recipe chart, according to one embodiment of the disclosed system.

FIG. 11 is a screenshot of an album chart view of one embodiment of the disclosed system.

FIG. 12 is a screenshot of an event chart view of one embodiment of the disclosed system.

FIG. 13 is a screenshot of a people chart view of one embodiment of the disclosed system.

FIG. 14 is a screenshot of a family tree chart view of one embodiment of the disclosed system.

FIG. 15 is a screenshot of a location chart view of one embodiment of the disclosed system.

FIG. 16 is a screenshot of a recipe chart view of one embodiment of the disclosed system.

FIG. 17 is a screenshot of a slideshow view of one embodiment of the disclosed system.

FIG. 18 is a screenshot of an advanced search filter view of one embodiment of the disclosed system.

FIG. 19 is a screenshot of a homepage view of one embodiment of the disclosed system.

FIG. 20 is a diagram of the Overall System Process Flow of MemoryWeb.

FIG. 21 is a diagram of the System for Reading Phase, System Interpreting, and Adding Digital File and Corresponding Data to Relationship Table Phase.

FIG. 22 is a table of the EXIF and MemoryWeb Tag Data Blocks

FIG. 23 is a table of the Microsoft Windows and MemoryWeb Tag Data Blocks.

FIG. 24 is a table of the MemoryWeb Person Tag Data Blocks.

FIG. 25 is a diagram of the Third Party Facial Recognition System.

FIG. 26 is a diagram of the Third Party Media System (Data Exchange).

FIG. 27 is a table of the User Settings Table.

FIG. 28 is a diagram of the Application Digital Tag Organizer System.

FIG. 29 is an illustration of the Application Dot-Tag Shape and Content.

FIG. 30 is a diagram of the Continuous Link of Application Dot-Tag System.

FIG. 31 is an illustration of the Slideshow View of Digital File and Application Dot-Tags.

FIG. 32 is a screenshot of People Application Views.

FIG. 33 is a screenshot of Collection Application Views.

FIG. 34 is a screenshot of Location Application Views.

FIG. 35 is screenshot of Uploads Application View.

FIG. 36 is a screenshot of Recipe Application View.

FIG. 37 is a diagram of the Advanced Filters System.

FIG. 38 is a screenshot of Adding the First Application Dot-Tag using Advanced Filter.

FIG. 39 is a screenshot of Single Application Dot-Tag Filter for Each Application View.

4

FIG. 40 is a screenshot of Single Application Dot-Tag Filter for Date in Uploads Application View.

FIG. 41 is a screenshot of the Single Application Dot-Tag Filter in Location Application View.

FIG. 42 is a screenshot of Adding Another Application Dot-Tag Filter.

FIG. 43 is a screenshot of the Multi-Dot-Tag Filter in Location Application View.

FIG. 44 is a diagram of the Keyword Fast Search System.

FIG. 45 is a screenshot illustration of Using Keyword Fast Search.

FIG. 46 is a diagram of the Share to Third Party Social Network Provider System.

FIG. 47 is a diagram of the Third Party Location Mapping System.

FIG. 48 is a diagram of the Share to Individual System.

FIG. 49 is a diagram of the Application Export System.

FIG. 50 is a table illustrating the Digital File Image File Directory Data Blocks of JPG Photo within Microsoft Before and After MemoryWeb.

#### DETAILED DESCRIPTION OF ILLUSTRATED EMBODIMENTS

Although the invention will be described in connection with certain preferred embodiments, it will be understood that the invention is not limited to those particular embodiments. On the contrary, the invention is intended to cover all alternatives, modifications, and equivalent arrangements as may be included within the spirit and scope of the invention as defined by the appended claims.

The present disclosure relates to one or more of the following features, elements or combinations thereof. A web-based digital file storage system is disclosed. The storage system may include a digital file repository for storing and retrieving digital files, such as photos, a digital tagging system configured to assign digital tags to the digital files, a sorting system, and a user interface.

The digital tagging system may include various types of data, such as a person's name, a location, a recipe, a date, a family relationship to the user, an event name, a rating, sharing rights, file type and a document name. The sorting system can allow the digital files to be searched and sorted according to a plurality of types of data and can be used for creating and organizing special views. The user interface may be user-configurable, and can present the digital files on a user's screen based on these user inputs.

The digital file repository may be accessible over the Internet. The sorting system may provide a user with the ability to search based on a plurality of digital tags. The disclosed system may also provide a way to track relationships between users, so that a family tree can be displayed.

Recipes may also be linked to a person's name, with, for example, a video and digital copy of original hand-written recipe to create a recipe view.

Moreover, the digital files and data can be exported as a single file with the digital tagging embedded within the exported file.

In another embodiment, a method of storing digital photographs is disclosed. The method may include the steps of storing a digital photograph in a file repository, associating a plurality of digital tags having different tag types with the digital photograph, providing a search function that permits searching by a plurality of digital tag types and provides a search result, and providing a user-configurable output to display the search result. The digital tag types may include, for example, a person's name, a location, a recipe, a date, a



US 10,423,658 B2

5

relationship, an event name, a rating, file type and a document type. The method may include a further step of providing access to the file repository via the Internet. The method may also allow for tracking relationships between users so that a family tree can be displayed.

Additional features of the disclosure will become apparent to those skilled in the art upon consideration of the following detailed description of preferred embodiments exemplifying the best mode of carrying out the invention as presently perceived.

The presently disclosed method and application (herein alternatively referred to as a "system") provides users with an Internet-based interactive platform to gather, organize, view, share and archive digital files using a proprietary organization system and export tagging process. As used herein, the word "tag" refers to any type of digital data that can be assigned to a file to describe some aspect of that file through a tagging process. For images, the tagging is preferably in EXIF format. For videos, documents and other file formats, any appropriate format may be used. The disclosed system allows users to create, view and share digital files, which could represent, for example, the memories a user has collected from the past and present, and could incorporate additional memories for generations to come. As outlined herein, various embodiments are disclosed that can accomplish these and other goals.

One disclosed embodiment includes an import feature. Users can import media files from users' favorite sources (e.g., computers, mobile phones, social networks, etc.). If any meta-tag information is embedded within the media (e.g., date taken and GPS coordinates), the system could automatically read and utilize it for the user. Digital files, media, meta-tags, and other data discussed herein may be saved to one or more file repositories (also referred to as a database herein).

In another aspect of the disclosed system, organizational functionality is provided. Similar to the concept of writing certain information "on the back of a photo," the system's digital tagging system and organizing feature allows a user to arrange large amounts of digital files with tags that can characterize and document the digital file(s). Digital files can be individually or group organized at the same time for many tags including, but not limited to, a person's name, family relationships of the subjects to the user and between each other (e.g., mother/father), location, date, event, album, comments, document type (e.g., birth certificate, poetry), recipe, ranking or rating, and sharing rights. Tags can be assigned to a single file at a time, or to a plurality of files at once. For example, if a user wishes to assign the tag "grandma" to 100 photos at once, the system provides a way for a user to select all 100 photos and enter the tag only once. An example of the manner in which digital photos can be organized is presented is seen in FIG. 1.

Yet another feature is the multiple views from which a user can display his or her digital media files and their tagged attributes. Using a user interface (e.g. a keyboard, mouse, or touch screen), users can select individual files, groups of files meeting specific criteria, or all files in their account from which to create views. These views may alternately take the form of a chart. These views will be auto-populated based upon either tag information already associated with the digital file upon import or the tags assigned to the digital files by the user within the aforementioned organization functionality. Each digital file can be enlarged, from any view or chart, by clicking an information ("i") button to show an enlarged version of the digital media file with all the tags that are assigned to that digital file, as

6

illustrated in FIG. 2. In another embodiment, the user interface may be user-configurable, as discussed further herein.

The following views are shown with particularity. In FIG. 1, the gallery view allows the user to see all the digital media that are associated within a group such as an event or custom album. The gallery view for either events or albums is illustrated in FIG. 3.

As shown in FIG. 2, an individual album or event view allows one to see the files associated with a specific group. For example, one can view the digital files that relate to a group of files called "Trip to Italy 2011." The individual album or event view is illustrated in FIG. 4.

A location view, as shown in FIG. 5, identifies within an interactive map (Google map shown as an example), where digital files were taken or originated. The location view can also provide additional outputs such as a journey route that identifies the specific locations for an event or trip that can be customized by users.

A people view, as shown in FIG. 6, shows thumbnail photos of all the people in the system that can be clicked in for a people profile view. A people profile view, as shown in FIG. 7, shows a profile picture of an individual, their birth/death information, family relationships, overview (comments) on the person, as well as links to other views that contain that individual in the system.

A family tree view, as shown in FIG. 8, can illustrate interactive family trees where one can see the family tree of an individual or family. If a user clicks on an individual within the family tree, it will take him or her to the people profile view of that person.

The timeline view, as shown in FIG. 9, will be an interactive timeline that allows you to set ranges of digital files by year, month and day. The digital files shown in the timeline will also be interactive and if the user clicks on a digital file or group of digital files (e.g., event or album), the user will then view the information related to the digital file(s).

A recipe view, as shown in FIG. 10, will show a recipe along with any digital files that are associated with it. For example, a cherished family recipe may show a digital copy of the original handwritten recipe, a photo of the family member who was the chef and a video of the family member making the recipe.

Each of the aforementioned views may also be seen in a chart format view that is interactive when any item on the chart is clicked, the user will then be taken to a new screen that details all relevant digital files (and file types) for the clicked item.

For album or event chart views, as shown in FIGS. 11 and 12, the elements listed in those charts will include individuals who are part of each album/event, number of digital files, date and other pertinent information.

A people view, shown in FIG. 13, may demonstrate all the names of individuals that are in the system in an alphabetical listing. Such a people view can also contain details on each person such as the number of photos and videos that are associated with that person. The user can click on that person to pull up the profile view of the individual or click on the number of photos to see all the photos associated with that person.

In the family tree chart view, shown in FIG. 14, family lineage can be viewed in multiple ways. For example, a user can set himself as the tree anchor and then see a tree of all people entered into the database related to the user. The user could also set a contact as the tree anchor and then just view the descendants of that individual.

US 10,423,658 B2

7

For a location chart view, as show in FIG. 15, listings of all the locations that are in the system are displayed along with the number of digital files, as well as names of persons associated with each. A user can click on the location to see all the digital media files that are associated with a specific location.

A recipe chart, as shown in FIG. 16, can show recipes that uploaded to the system. Along with the ingredients and steps of each recipe, this view can identify the chef(s) name, number of photos and videos associated with each.

For any of the views, the user can click on the digital file to start a slideshow feature that will allow them to scroll through an enlarged view of the digital file as illustrated in FIG. 17.

Another aspect of the disclosure is the search filter. This filter allows users to select one or more criteria that will narrow down their results to just those digital files matching input criteria. The entire system can be filtered by, for example, key words (or plurality of key words), event names, location, people, albums, star rating, file type, document type, and dates. A user may filter based on more than one criterion at a time. To help users quickly identify digital files that may still need to be organized, the advanced search filter also allows users to isolate files that have no date, no location, no people, no specific date/range, no upload date information or are lacking any other tag.

It should be noted that in one embodiment, searching via key word will search through all tagged information (user populated or auto-generated upon import). For example, if a user searched for the term "Ohio," the system would search for that term associated with any file in any way. If the user had files with Ohio as a state, file name, street name, person's name, file comment, etc., all would be retrieved.

Settings applied in the advanced search filter can cumulatively carry over to any subsequent pages until new criteria are selected. For example, a user can apply a filter to retrieve files associated with a particular person. Then the user can set a date range to further narrow results to show only those files for that selected person within the date range. Any pages viewed from that point forward throughout the entire site would only contain files associated with person and the date range specified. The advanced search filter is illustrated in FIG. 18.

Yet another feature can be a user's homepage, as illustrated in FIG. 19, that can summarize the user's content within the system including relevant information in the system. It is contemplated that a user's homepage may show a summary of the total number of photos, videos, documents and audio files that the user has uploaded. In this embodiment, for each group of digital files (e.g., photos), the percent of files that has been organized with pertinent data such as date, name(s) and location can be noted. In addition, the homepage can show a list of people that are in the system and the respective count for photos, videos, documents and audio files associated with each person. Also contemplated is a summary of the events, albums and locations that have been entered into the system. The user homepage may serve as an executive summary dashboard of one's entire system and can be modified to provide data in an executive summary format for a user.

Another feature is that the entire system including the dynamic views can be presented in a wide range of user outputs—e.g. on the user's computer, smartphone or tablet display. The user may choose to present the digital files in any of the various types of ways disclosed herein. Other ways of outputting the files are also possible. The user can create and modify various sharing rights so that third parties

8

may view the files and if desired, provide comments, apply tags or even download/copy the files for their own use.

Still another embodiment can provide export functionality. Once a user has used the organization functionality to assign information to data file(s), a user may want to export the data file in its original form (e.g., .jpg, .mp4, etc.) with the tags embedded within the digital file in the form of EXIF tags. In other words, a user can export his or her entire set of digital files, or may choose a subset based on keywords and tags. The exported digital files can include key tags and attributes users have assigned, and in one embodiment, such tags and attributes can be embedded within the digital files. For example, each exported digital file may be imbedded with user-entered data such as the people, location, and event name. This feature will allow the users to back up their files to another source (e.g., external computer hard drive) or to transport it to another venue (e.g., another website that is used for viewing and/or sharing digital files such as a social media website) where it can be viewed with these attributes. This export feature can provide users with the advantage of never losing key data that was stored simply because the user chooses to move its digital files to a new digital archiving system.

A method is also disclosed. The method may include the steps of storing a digital file in a file repository, associating a plurality of digital tags having different tag types with the digital file, providing a search function that permits simultaneously searching by a plurality of digital tag types and provides a search result, and providing a user-configurable output to display the search result. The digital tag types may include, for example, a person's name, a location, a recipe, a date, a relationship between individuals, an event name, a rating, and a document type.

Under the disclosed method, access may be provided to the repository via the Internet. Relationships between users may also be tracked such that a family tree can be displayed. A recipe may also be linked to a user or person. Finally, the method may include the step of outputting a digital file and its associated digital tags into a single file.

While the disclosure is susceptible to various modifications and alternative forms, specific exemplary embodiments thereof have been shown by way of example in the drawings and have herein been described in detail. It should be understood, however, that there is no intent to limit the disclosure to the particular forms disclosed, but on the contrary, the intention is to cover all modifications, equivalents, and alternatives falling within the spirit and scope of the disclosure as defined by the appended claims.

A plurality of advantages arise from the various features of the present disclosure. It will be noted that alternative embodiments of various components of the disclosure may not include all of the features described yet still benefit from at least some of the advantages of such features. Those of ordinary skill in the art may readily devise their own implementations of a digital file organization system that incorporate one or more of the features of the present disclosure and fall within the spirit and scope of the disclosure.

Application (also called "MemoryWeb Application" or "System")—The Application is an online program constructed using a mix of freeware code as well as custom-built proprietary coding with an interface that has many functions including: 1) the ability to import, associate and embed Digital Tags to Digital Files by using existing Tags of a Digital File as well as the Application's custom Digital Tag options (also called the Application Digital Tag Organizer) for use in the Application; 2) view, sort, annotate, and share

US 10,423,658 B2

9

Digital Files from the various Application Views; 3) navigate using the proprietary Application Dot-Tag System; 4) filter Digital Files using the Application Advanced Filter System or Fast Search System; 5) store the Digital Files through an interactive Storage System through a User Relationship Table; and 6) export the Digital Files with the Digital Tags embedded within the Digital Files. This Application has already been disclosed in U.S. patent application Ser. No. 13/157,214 and incorporated herein by reference. This Application is also being trademarked as “Memory-Web” with the US Commissioner for Trademarks on Dec. 26, 2013 under application No. 86/152,930. The Application may be accessible over various user interfaces that may use the Internet and via applications that would be used on mobile communication devices such as smart phones (e.g., iPhones), Personal Digital Assistants (PDAs) and Tablets (e.g., iPads).

**Application Views**—The Application Views utilizes the Application’s ability to associate Digital Tags to Digital Files and display them in customized views such as Uploads, Collections, Slideshow, Location, Timeline, Family Tree, People Profile, and Recipes.

**Application Advanced Filter System**—A function that provides search capabilities using one or more Digital Tags within the Application, resulting in a narrowed output display of the applied filters to display one or more Digital Files and viewed in one or more Application Views. The Application Advanced Filter System can allow Digital Files to be searched and sorted according to a plurality of types of data and can be used for creating and organizing special views. The user interface may be user-configurable, and can present the Digital Files on a user’s screen based on these user inputs.

**Application Dot-Tag**—The manner in which a Digital Tag is displayed within the Application using pill-shaped indicators that can reside near a file’s image or overlaid on the file’s image. MemoryWeb Tags are illustrated as Application Dot-Tags within the Application to help the user organize their Digital Files with key components of related information such as people, date of file, location, collection, star ranking, and recipe. The MemoryWeb Application Dot-Tag is more than just text (as traditional tagging systems) because Memory-Web Application Dot-Tags act as mini search engines that allow the user to see how many matching files there are to that MemoryWeb Tag and if selected will take the user to the corresponding Application View to illustrate the linked search results of that Application Dot-Tag. However, it should be understood that other shapes and indicators are contemplated by the present invention, and may even be user-configurable. For example, the indicator may take the form of a sticky note, a different shape, a dotted shape, or any number of variations of indicators that may be functional in displaying one or more words. Colors may also be used to indicate differing categories of indicators, or differing associations/intersection of the indicators. Within the pill-shaped indicator, the specific Digital Tag information is used to display information about a Digital File. Throughout this document, the Application Dot-Tag is shown as illustrated in FIG. 29 (indicators **0650**, **0654**, **0655** and **0656**).

**Application Digital Tag Organizer System**—Within the Application, a function for assigning one or more Digital Tags to one or more Digital Files at the same time through the Application Dot-Tag Organizer System. This feature allows Digital Tags to be assigned to items such as photos, videos, audio files, and documents. The information created from this functionality drives the outputs for the Application

10

Views. The Application Digital Tag Organizer System will allow the tagging of key items as date, GPS location, star ranking, people (both name and facial recognition), album(s), family relationships, a date, event name, sharing rights, file type, document name, and recipes. Each of the Digital Tags is user-configurable.

**Application Export System**—Ability to export Digital File(s) from the Application, with the Digital Tags that were created within or imported/uploaded into the Application, embedded inside the Digital File. The Digital Tags within the exported Digital File can then be viewed and used by any other applications that can read EXIF tags.

**Application Programming Interface (“API”)**—The Application Programming Interface (API) is the system that interacts with other communication points or services over HTTP via a POST, GET, PUT, DELETE methods. The API provides a way for users to access their MemoryWeb data outside of the web browser on mobile devices or other web connected devices. The actions within the API deliver MemoryWeb Digital Files and Digital Tags along with all meta data associated with such files and tags.

**MW Automatic Uploader/Downloader Application**—Separate from the main MemoryWeb Application, there are additional proprietary applications created by MemoryWeb for user to upload and download (export) Digital files to and from the main MemoryWeb Application. The first is the MW Automatic Uploader/Downloader built for Window’s compatible computers. The second is the MW Automatic Uploader/Downloader build for MAC computer. Both of the MW Automatic Uploader/Downloader applications can be installed on the user’s computer to automatically upload the desired Digital Files from their computer to the main MemoryWeb Application. In addition, the MW Automatic Uploader/Downloader applications allow for Digital Files to be exported from the main MemoryWeb Application to a desired folder on the user’s computer with the updated tags embedded within the Digital File.

**Storage System**—A storage system can be a cloud-based Storage System (e.g., Amazon’s AWS, Dropbox, Box.net, Deutsche Telecom’s Cloud, etc.), hard-drive, server, or any venue that allows one’s information to be stored. The storage system would act as a database and file repository for storage and retrieval of Digital Files to and from the Application.

**Digital Files**—An electronic file that can be in various file formats (e.g., PNG, JPEG, PDF, TIFF, MP3, MP4, WAV, and GIF) that are of items such as photos, videos, audio files, and documents.

**Digital Tags**—The word “Digital Tag” refers to any type of digital data that can be assigned to a file to distinguish and describe some aspect of that file through a tagging process. Digital Tags will be comprised of various groups of digital data including:

- a) **EXIF Tags**—EXIF stands for “Exchangeable Image File Format” and is a standard that specifies the formats for images, sound, video, and ancillary tags. The EXIF standard is an Open Standard produced by the Standardization Committee and is detailed within their document called *Standard of the Camera & Imaging Products Association*. Standard of the Camera & Imaging Products Association, CIPA DC-008 Translation-2012. Exchangeable image file format for digital still cameras: EXIF Version 2.3. Established on April, 2010 and Revised on December, 2012. Prepared by: Standardization Committee. EXIF tags are also called “meta tags” or “metadata.” The EXIF information is formatted according to the TIFF specification, and may

US 10,423,658 B2

11

be found in JPG, TIFF, PNG, JP2, PGF, MIFF, HDP, PSP and XCF images, as well as many TIFF-based RAW images, and even some AVI and MOV videos. The EXIF meta information is organized into different Image File Directories (IFD's) within an image. The names of these IFD's correspond to the ExifTool family 1 group names.

When Digital Files are captured with digital cameras (including smartphones), scanners and other systems handling image, video and sound files, certain EXIF tags are automatically populated within the Digital File and can cover a broad spectrum of information such as:

Descriptions (e.g., Title, Subject, Star Ratings, Tags, People, Comments)

Origin (e.g., Authors, Date taken, Copyright)

Image information (e.g., dimensions, color representation and size)

Camera Setting Information (e.g., camera maker, camera model), including static information such as the camera model and make, and information that varies with each image such as orientation (rotation), aperture, shutter speed, focal length, metering mode, and ISO speed information.

Advanced Photo Information (e.g., lens maker, lens model, contrast, brightness, EXIF version, etc.)

File Information (e.g., file name, item type (e.g., JPG file), date created, date modified, size, etc.)

A thumbnail for previewing the picture on the camera's LCD screen, in file managers, or in photo manipulation software.

Global Positioning System (GPS) information that is also known as geocoding.

The Application will auto-populate any existing EXIF Tags from the original Digital File upon upload into the Applications (as illustrated in FIG. 21) and put this information into the Users Relationship Table on the Storage System.

b) Extensible Metadata Platform (XMP)—This is Adobe's Extensible Metadata Platform (XMP) format for labeling metadata within an Adobe file.

c) Png Textual Data (tEXt)—This is Portable Network Graphics (PNG) metadata format for labeling within a PNG file.

d) Microsoft Windows Tags—These are Microsoft Windows File Attributes that are stored in Data Blocks from Microsoft's system.

e) MemoryWeb Tags—these tags are typically developed within MemoryWeb and can relate to People Names, Recipes, Collections, Location Name, Family Relationships (also discussed in MemoryWeb Person Tags), Social Network Data (e.g., ID, contact IDs, etc.), File Folder Batch Name. This would be folder directory name that includes the name of each folder that eventually leads to the folder that the digital file was actually stored within the User's PC. This is used to help the user organize data within MemoryWeb based upon the users organization system used on their PC. Facial Recognition Data, and other type of tags that are user defined.

f) MemoryWeb Person Tags—These user defined tags within MemoryWeb are specific to each person profile including such areas as Nicknames, Birthdates, Date of Birth, Date of Death, Biography, Family Relationships (e.g., Mother, Father, Brother, Sister, Daughter, Son, Spouse, etc.), Pets, and Firsts (e.g., First Steps, First Words, First time riding a bike, etc.).

12

The combination of all the aforementioned tags is collectively referred to as "Digital Tags." The list of groups and Digital Tag types will grow as technology in this area improves over time. These Digital Tags are also referred to as "File DNA" for MemoryWeb.

User Relationship Table—Within the Application, each User will store the data related to Digital Files, Digital Tags, User Settings, and other specific information related to a User's repository of information is kept within the User Relationship Table.

Data Blocks—Within the User Relationship Table, there are Data Blocks that will store information related to EXIF Tags, Microsoft Windows Tags, MemoryWeb Tags, and MemoryWeb Person Tags. These Data Blocks are used to generate the information that is displayed in such key components such as the Application Views and Application Dot-Tags.

Custom Code—Proprietary scripts and code developed by MemoryWeb to enable key functions such as Dot-Tag relationships and ability to embed new user-defined tags into a file and/or override existing EXIF tags and the ability to navigate the application and it's functions via connections drawn from the associated tags

Open Source Libraries—Non-proprietary code taken from the free, open source community integrated that is used by the Application.

User Interface—The Application may be accessible over various "User Interfaces" including Personal Computers (e.g., Macs, Windows, etc.), Personal Digital Assistants (PDA) (e.g., iPhones) and Tablets (e.g., iPad). The User Interfaces can be controlled through the Application using various tools such as a keyboard, mouse, and touch screen.

The present invention relates to an Application that has many functions including: 1) the ability to import, associate and embed Digital Tags to Digital Files by using existing Tags of a Digital File as well as the Application's custom Digital Tag options (also called the Application Digital Tag Organizer) for use in the Application; 2) view, sort, annotate, and share Digital Files from the various Application Views; 3) navigate using the proprietary Application Dot-Tag System; 4) filter Digital Files using the Application Advanced Filter System or Fast Search System; 5) store the Digital Files through an interactive Storage System through a User Relationship Table; and 6) export the Digital Files with the Digital Tags embedded within the Digital Files.

Prior to the invention of digital photography, people tended to share photos by displaying printed copies in frames and albums or would store them in a container in hope of preserving these assets for future use or future generations. Important photos would often be inscribed on the back with significant details (people, location, and event) to preserve the memory of that particular occasion. Many people would share their memories by assembling an album that could be viewed with others. Occasionally, extra copies of special photos may have been printed for friends, relatives, etc. At one time, film slide shows were also a popular medium for sharing photo memories.

With the evolution of Digital Files, there has been explosive growth in the number of individuals taking digital photos, converting old photos to digital copies, making movies and gathering digital documents and in the sheer number of files people are capturing digitally. Today, virtually every personal computing device contains some kind of photo, movie or other type of digital file creator/player/viewer/storer/etc.

At the same time, there is little to no cost for people to store large amounts of photos in various "containers" of the

US 10,423,658 B2

13

modern age. Facebook, Flickr, Shutterfly and countless other social media and specialty Digital Files sites allow users to post and share images to a community with a frequency and ease that continues to feed the fire of the digital revolution. However, they don't allow much organization of Digital Tags, dynamic viewing of Digital Files, and the ability to export the Digital Files with new Digital Tags. Questionable and ever-changing privacy terms for user/account information, including digital files, have also left the marketplace leery of posting their full digital archive and associated context to these sites.

What is needed to complement the widespread availability of Digital Files is a medium that allows people to organize, view, navigate, search, preserve and share these files with all the memory details captured, connected and vivified via an interactive interface. Such a solution would allow Digital Files, including documents, photos, videos and audio, to tell a full story now, and for generations to come.

As disclosed in detail herein, the application provides the much needed platform that saves a user significant time, provides significant information with minimal screen space, and provides an appealing and customizable interface that will enhance the user experience.

Anytime the MemoryWeb Application exchanges information with an external Storage System or User Interface such as a phone, tablet, computer or other internet based user device, the interaction with the MemoryWeb Application involves Application Programming Interface (API). The API's allow each system to call the specific Digital Files and Digital Tags associated with each request so they can be viewed.

Additional features of the disclosure will become apparent to those skilled in the art upon consideration of the following detailed description of preferred embodiments exemplifying the best mode of carrying out the invention as presently perceived.

The present disclosure relates to one or more of the following features, elements or combinations thereof. The Application allows the importation of Digital Files and then the association of Digital Tags to the Digital Files by using existing EXIF Tags of a Digital File as well as the Application's custom organization of Digital Tags for use in the Application. The Application then allows the Digital Files to be viewed, sorted, annotated, navigated, and shared using the various Application Views. The Application can also filter Digital Files using the Application Advanced Filter System functionality. The Digital Files can be stored through a Storage System that interacts with the Application. In addition, the Application allows for Digital Files to be exported with the Application's Digital Tags embedded within the Digital Files.

The Application may be accessible over various user interfaces that may use the Internet and via applications that would be used on User Interfaces such as Personal Digital Assistants (PDA) (e.g., iPhones) and Tablets (e.g., iPad).

The presently disclosed Application provides users with an interactive platform to gather, organize, view, share and archive Digital Files using a proprietary organization system called the Application Digital Tag Organizer and export the modified Digital files with the Application's Digital Tags embedded within the Digital Files using the Application Export feature.

The Application allows users to create, navigate, search, view and share Digital Files, which could represent, for example, the memories a user has collected from the past and present, and could incorporate additional memories for generations to come. As outlined herein, various embodi-

14

ments are disclosed that can accomplish these and other goals. Description of embodiments

In FIG. 20, the overall process flow of MemoryWeb is depicted. Each of the boxes depicted that are Inside the Memory-Web System (0050) are detailed additional figures within this application. However, to help illustrate the overall process flow, FIG. 20 was created. In FIG. 20, the process begins when original digital file(s) are uploaded to MemoryWeb (0101). This process can take place in a variety of ways including when a user manually selects uploads from the Uploads Application View (see FIG. 35 indicator 1701), installs the a MW Automatic Uploader/Downloader Application on their computer, or imports Digital Files from the users' other sources (e.g., mobile phones, social networks, etc.).

Once a file is uploaded, the System Reading Phase (0100) begins. Information from the System Reading Phase is then sent to the System Interpreting and Adding Data to Relationship Table Phase (0200). During this phase, information is passed back and forth to the Third Party Facial Recognition System (0400) to the Third Party Facial Recognition Provider (0401). The system will also coordinate between the Third Party Social Media (Data Exchange) (0500) and then to various Third Party Media Providers (0501). Another key step from the System Interpreting and Adding Data to Relationship Table Phase is adding both the Digital Files and the corresponding tags to the User Relationship Table (0300). As illustrated in subsequent figures within the patent application, the User Relationship Table serves as the key repository for all of the user's data that generates virtually every display from the application. From the User Relationship Table, the user can use the Applications Digital Tag Organizer System (0600), the Continuous Link of the Application Dot-Tag System (0700), the Advanced Filters System (0800), or the Keyword Fast Search System (0900). The user can also share Digital File(s) through the Share to Social Network Provider System (1000) to a Third Party Social Network Provider (0501) that is outside the MemoryWeb system or use the Share to Individual System (1200) to a Person (1201) that is Outside the MemoryWeb system using the data from the User Relationship Table. To help generate some of the map views, the system will utilize a Third Party Geographical Mapping System (1100) that connects to a Third Party Geographical Mapping Provider (1101) that is Outside the MemoryWeb system. The user can also export Digital Files with the Digital Tags embedded within the Digital File using the Application Export System (1300) that will send a MemoryWeb Modified File from MemoryWeb (1301) to a designated location by the User that is outside the MemoryWeb system.

As illustrated in FIG. 21, the System Reading Phase (0100) is described in further detail. The System Reading Phase will first check if the digital file is a duplicate file (0102) that is already in the User's collection. If the file is a duplicate, it will not be uploaded (0104). However, if it is a new file for the user, the System Reading Phase will then locate the EXIF Image File Directories in the digital file (0103) and then send that information to the System Interpreting and Adding Data to Relationship Table Phase (0200).

As further illustrated in FIG. 21, the System Interpreting and Adding Data to Relationship Table Phase will take the EXIF Image File Directories sent from the System Reading Phase and read and iterate through each EXIF tag item (0201). At this time, the system will identify faces from the digital file and then send this information to the Third Party Facial Recognition System (0400) that will coordinate with the Third Party Facial Recognition Provider (0401) that is

US 10,423,658 B2

15

outside the MemoryWeb. When the Third Party Facial Recognition System (0400) sends back data related to facial recognition of faces in the Digital File, it comes back then the system sends information related to people facial recognition tags to the MemoryWeb Person Tag (Data Blocks) within the User Relationship Table (0300). The detailed process of the Third Party Facial Recognition System (0400) is further explained in FIG. 25.

During the Read & Integrate Through Each EXIF Tag item (0201) the process will also upload a the original Digital File in MemoryWeb (0211), the process will also store a copy of the original file within the User Relationship Table (0300) and create five duplicate copies (0203) of different resolution sizes as follows: XL Duplicate File (0302), Large Duplicate File (0303), Medium Duplicate File (0304), Small Duplicate File (0304), and a Thumbnail Duplicate File (0306). Each duplicate file is used in different parts of the application depending upon the photo size needed for such areas within the Application such as Application Views, Application Dot-Tags, and Application Digital Tag Organizer System.

Another embodiment during the Read and iterate through each EXIF tag item (0201) stage is determining if a MemoryWeb tag exists (0204). A MemoryWeb tag is a Digital Tag that is currently being used as an Application Dot-Tag within the Application. If it is not a Digital Tag that MemoryWeb is currently using, the application will Save EXIF data to the User Relationship Table for Digital File (0205) and send this to the User Relationship table. This is done in case there are EXIF data that are desired to be used in future releases of the Application. For the Digital Tags that are being used in the Application, the system will Parse EXIF data into MemoryWeb Tags (0206), look up MW tag data (0207) and determine if a Digital Tag currently exists (0208). If a Digital Tag does not exist, the system will Create a new MW tag data ((0209) and send this to the appropriate Data Blocks within the User Relationship Table (0300). If Digital Tag data does exist, the system will Associate existing tag data ((0210) to the appropriate Data Blocks within the User Relationship Table (0300).

The third and final area within FIG. 21 is the System Indexing Digital Files and Tag Data Blocks for a Digital File within the User Relationship table (0300). In the User Relationship Table, the user's information system information stored such as User Settings (0390). Copies of the Original Digital File (0301), XL Duplicate File (0302, Large Duplicate File (0303), Medium Duplicate File (0304), Small Duplicate File (0304), and Thumbnail Duplicate File (0306) are stored. The final area of the User Relationship Table relates to the data blocks including EXIF Tag (Data Blocks) (0320), Microsoft Windows Tag (Data Blocks) (0320), MemoryWeb Tag (Data Blocks) (0360), and MemoryWeb Person Tag (Data Blocks) (0380).

In FIG. 22, there are two charts that illustrate EXIF and MemoryWeb Tag Data Blocks. The first chart illustrates the EXIF Tags Version 2.3 (Data Blocks) (0320). For the EXIF Tags Version 2.3 (Data Blocks) (0320), the information from this table is an expert from an Open Source Library code produced by the Standardization Committee that is detailed within their document called Standard of the Camera & Imaging Products Association. While all the EXIF tags that are contained within a Digital File are read (as previously illustrated in FIG. 21 within the System Interpreting and Adding Data to Relationship Table Phase (0200)) and are stored within the system's User Relationship Table (0300), a summary of the primary EXIF tags that are currently used within MemoryWeb are illustrated in the EXIF Tag Blocks

16

(0320). The EXIF tag information is organized into different Image File Directories (IFD's) or "Data Blocks" within an image and organized in the column heading of Tag Label (0321). The names of these IFD's correspond to an EXIF standard for ExifTool family 1 group names that are depicted in the column heading of EXIF Group (0322). The IFD's are stored within a specific data block location within a Digital File and these locations have a standard name of the specific location (0323) within the Digital File. The primary EXIF tags that are read and used by MemoryWeb to generate Application Dot-Tags are: Description Title (0324), Description Rating (0325), Origin Date Taken (0326), Digital File Width (0327), Digital File Height (0328), User Comment (0329), GPS Latitude (0330), GPS Latitude Ref (0331), GPS Longitude (0332), and GPS Longitude Ref (0333).

In FIG. 22, the second chart illustrates the MemoryWeb Tag (Data Blocks) (0360) that overlap with standard EXIF Tag blocks. As previously illustrated in FIG. 21, the EXIF Tag Data blocks are read and brought into the User Relationship Table (0300). When the data is stored within the system's User Relationship Table, they are also stored with the corresponding EXIF tag label as illustrated in the column called MemoryWeb Tag (0361). For example, when a Digital File is brought into MemoryWeb and the system reads the Origin Date Taken (0326) for the EXIF Tag block, the system will denote this in the MemoryWeb table as MediaAsset.DateCreated (0364). This designation is very important as it allows MemoryWeb to re-inject any updated or new MemoryWeb Tag data into the corresponding standard EXIF Tag blocks of a Digital File when it is exported from MemoryWeb (as previously illustrated in FIG. 20 with the Application Export System (1300)). Continuing with this example, if the Origin Date Taken is modified within the MemoryWeb system, when the file is exported through the Application Export System (1300), the new updated date from MemoryWeb (0364) will be mapped to the EXIF Tag Data block with the Tag Label of Origin Date Taken (0326) with the EXIF Group called ExifIFD (0334) and the Location called 0x9003 (0335).

In situations where there is no standard EXIF Tag data block for the MemoryWeb Tag for such items such as Collections, People Location Name, Recipe Name, etc. (0367), they are mapped to a general EXIF Tag data block called User Comment (0329). As the standards for EXIF Tag data blocks change, the system can be mapped to any new specific EXIF Tag data blocks. For example, if an EXIF Tag Data block is made for Recipe Name, the MemoryWeb Tag related to Recipe Name will be mapped specifically to that new EXIF Tag data block as opposed to User Comment.

In FIG. 23, there are two charts that illustrate Microsoft Windows and MemoryWeb Tag Data Blocks. The first chart illustrates the standard Windows Imaging Component (WIC) Metadata (Data Blocks) (0340). Microsoft Windows has their metadata tag blocks contained in areas called Tag Labels (0341). The primary WIC Metadata data blocks that are read and used by MemoryWeb to generate Application Dot-Tags are: File Name (0342) and File Folder Path (0343). The corresponding MemoryWeb Tag data blocks (0360) for the WIC metadata tag blocks are called MediaAsset.FileName (0372) for the Microsoft file name and MediaAsset.UploadBatch.Batchname (0373) for the Microsoft File Folder Path. The ability for MemoryWeb to read the File Folder Path from Microsoft is a unique process used within MemoryWeb to help the user organize their photos based upon the organization methods they have already used within Microsoft. For example, if the user stored a group of photos on their Microsoft computer in the file directory C:/Photos/

US 10,423,658 B2

17

2013/First Day of School, MemoryWeb will automatically place the photos that were located within that Microsoft File Folder Path into a MemoryWeb Application Dot-Tag under a collection called "First Day of School" based upon the last folder within the file folder path. An example of the Application Dot-Tag that would be generated from the File Folder Path is in FIG. 31 with the label "First Day of School" (0770). In addition, MemoryWeb will allow the user to view the photos that are within a specific File Folder Path in the MemoryWeb Uploads Application View so that the user can organize photos from the same File Folder Path. An example of how this will be illustrated within MemoryWeb's Uploads Application View is in FIG. 35 with the grouping of photos with the File Path Name C:/Photos/2013/First Day of School (0709).

In FIG. 24, the MemoryWeb Person Tag Data Blocks (0380) that are contained with a User Relationship Table are illustrated. For any person that is added within a user's account, various MemoryWeb Person Tag Data Blocks are stored including: Person Name (0395), Nickname (0381), Birthdate (0382), Date of Death (0383), Biography (0384), Mother (0385), Father (0386), Brother(s) (0387), Sister(s) (0388), Daughter(s) (0389), Son(s) (0390), Spouse(s) (0391), Facial Recognition (0392), FacebookID (0393), Pets (0394), and other data blocks that will be added in the future as the Application grows (0396). These data blocks are primarily used in the People Profile Application View as illustrated in FIG. 32 (indicator 1430). One embodiment within the MemoryWeb Person Tag Data Block contains the FacebookID (0393). As illustrated in FIG. 26 (indicator 0507), information from Third Party Media Providers will be exchanged within MemoryWeb and the user's FacebookID will be provided and stored within the MemoryWeb Person Tag Data Block. In addition, any of the User's contacts from Facebook will also be downloaded into the corresponding MemoryWeb Person Tag Data Blocks for any matching persons within the User's MemoryWeb account. The information from the Third Party Media Providers that are stored within MemoryWeb will be used to provide "push notifications" to the user for various items such as when the user or any one of its contacts posts a photo to that Social Media venue.

As illustrated in FIG. 25, the Third Party Facial Recognition System (0400) is described in further detail. As photos are imported or uploaded into the Application, the systems will request thumbnail Digital Files (0404) from the User Relationship Table (0300). On a routine basis (e.g., daily), the system will retrieve all the thumbnails of Digital Files with unconfirmed faces (0403) and the send those Digital Files (0404) to the Third Party Recognition Provider (0401). The Third Party Facial Recognition Provider (0401) uses their algorithms to find location of eyes, nose, mouth and many other points for each face detected in the photo. They will also determine gender, check if the person is smiling, have eyes open, lips sealed or wearing glasses. The Third Party Facial Recognition Provider will use their algorithms to associate potential matches of faces for the user's collection of photos. For each face, the system will send back attributes including gender (male, female), glasses (true, false), smiling (true, false), lips (sealed, parted), eyes, (open, closed), mood (happy, sad, angry, surprised, disgusted, scared, neutral), field in the response have two subfields: value (string) and confidence (integer). For each attribute, the Third Party Facial Recognition Provider will assign percentages of confidence (0% to 100%) for each attribute that can be used by the MemoryWeb Application to utilize

18

The Third Party Facial Recognition Provider will then send the information relating to a person back to MemoryWeb (0405). The MemoryWeb Application parse the identified faces and corresponding Facial Recognition data for each Digital File (0406). The system will interact with the User Relationship Table and determine if the face is an existing (i.e., "trained") face in MemoryWeb where there is a Face ID in the User Relationship Table (0407). If not, the system generates a facial recognition record for unknown person and then sends information to MemoryWeb Person Tag (Data Blocks) in User Relationship Table (0410). If yes, the system will then determine if the face is above the system's thresholds for confirming a face is a specific person in the user's MemoryWeb system (0408). If no, system generates virtual unconfirmed facial recognition record for person and then sends information to MemoryWeb Person Tag (Data Blocks) in User Relationship Table (0411). If yes, the system records and associates specific face for Digital File with a MemoryWeb Person ID and sends to MemoryWeb Person Tag (Data Blocks) in User Relationship Table (0409).

Typically, the ability to confirm and deny facial recognition matches will be within the People Profile Application View as illustrated in FIG. 32 within the facial recognitions area (indicator 1442). The system will also have other facial resonations area where the user can confirm or deny the suggested facial recognitions of a person for a Digital File. When the user denies the suggested facial recognition, the system dis-associates potential person match Tag, search's the user's collection for other potential matches, and then sends information to Tag Data Block of Relationship Table for the Digital File. If the user accepts the suggested facial recognition, the system sends this facial recognition tag confirmation to the User Relationship Table for the Digital File. Once a confirmation is made, the newly associated Digital File will have that confirmed person Application Dot-Tag associated to that Digital File for all Application Views. Each time an accepted or denied facial recognition is made for a specific person, the specific data points used for facial recognition is improved and sent to the Third Party Facial Recognition Provider for more accurate confirmations of that person during the next run for that person.

As illustrated in FIG. 26, the Third Party Media System (Data Exchange) (0500) is described in further detail. There are numerous types of third party media systems that are contemplated for MemoryWeb including social network providers (e.g., Facebook, Twitter, and LinkedIn) and other photo sites (e.g., Flickr and Picasa). In addition, it is contemplated for the ability to print Digital Files from MemoryWeb using third party print providers such as Walgreens or Shutterfly. Further contemplated solutions might be from digital file warehouses such as Dropbox and box.net. All of the Third Party Media Systems will interact with MemoryWeb using the same system that is described within FIG. 26. The Third Party Social Media System starts when the user initiates sharing of their information with Third Party Media Provider with MemoryWeb (0502). When this is initiated, the system will send registration information (0503) to the Third Party Media Provider (0501). Once received, the Third Party Media Provider will send back a confirmation with the Third Party Social Media ID (0504) and then the system will send the information (0505) to the User Settings Table (0390) within the User Relationship Table (0300). The system will then send daily requests from the User Relationship Table for contact names and IDs (0506) to the Social Media Provider (0506). If there are new contact names that are not part of the user's current people,



US 10,423,658 B2

19

the system will receive new contact names and IDs from the Social Media Provider (0501). The user will have the ability to confirm or deny matches (0508) with their contacts within MemoryWeb. If there is a match, the system will associate the existing person within MemoryWeb to the same ID of the person within the Third Party Social Media platform (0509) and then send this to the User Relationship Table. If there is not a match, the system will add this additional contact as a new person and send (0510) this to the User Relationship Table. If the user wants to share or print Digital Files from MemoryWeb, they can do this with the Share to Third Party Media Provider System (1000) that is further detailed within FIG. 46.

In FIG. 27, the MemoryWeb User Settings Table is illustrated. As illustrated in the User Settings Table (1900), various data blocks of information is stored including the User's Name (1901), Payment ID (1902) that is used with third party payment providers, Password (1903), Account Type (1904) (i.e., free or paid account), User's email (1905), Language preference (1906), Date format preference (1907), Email notification (1908) preferences, the ability to share Contacts (with third Party Social Media) (1909), Facebook ID (1910), API Token (1911), Payment Date (1912) and other settings that will evolve as the Application grows (1913).

In FIG. 28, the Application Digital Tag Organizer System (0600) is illustrated. Within various Application Views the user can select, add, delete and edit MemoryWeb Tags for such areas as people, date, location, collections, star rankings, and recipes. An illustration of an Uploads Application View where MemoryWeb Tags for a Digital File can be selected, added, deleted, or edited is illustrated in FIG. 35. The Application Digital Tag Organizer System begins when the user selects one or more Digital Files in MemoryWeb (0601). The system then sends a request to the User Relationship Table for the specific Digital File (0602). The system then retrieves the Digital File and the Digital File Tag Data Blocks (0603) from the User Relationship Table (0300). Next, the system will display the Digital File and the corresponding Digital File Tag Data Blocks in the form of Application Dot-Tags (0604). An example of how the system can illustrate a Digital File with the corresponding Application Dot-Tags is in FIG. 31 (indicators 0780, 0765, 0766, 0768, 0770, and 0771).

If the user selects an Application Dot-Tag (0605), the system will utilize the Continuous Link of Application Dot-Tags System (0700) to produce the results of that Application Dot-Tag within one of the Application Views that is later illustrated in FIG. 30.

If the user selects add for a MemoryWeb Tag (0606), the user can add a new MemoryWeb Tag. When the user begins to type in text to add a tag, the system will produce suggestions on matching MemoryWeb Tags or the option to add a new tag (0607). If a matching tag is selected (0608), the system associates the new MemoryWeb tag to the Tag Block of the Relationship Table for the Digital File (0610). Alternatively, if the tag does not exist the user can create a new MemoryWeb Tag (0609) and then the system associates the new MemoryWeb tag to the Tag Block of the Relationship Table for the Digital File (0611).

If the user selects edit for a MemoryWeb Application Dot-Tag (0612), the user can add information text to edit the MemoryWeb Tag and the system will produce suggestions or matching MemoryWeb tags or the option to add a new tag (0613). If there is a match within the user's system, the matching MemoryWeb Tag will appear and the user can select the MemoryWeb Tag (0614). Once the matching tag

20

is selected, the system associates the new MemoryWeb tag to the Tag Block of the Relationship Table for the Digital File (0616). Alternatively, the user can create a new MemoryWeb Tag (0615) and then the system associates the new MemoryWeb tag to the Tag Block of the Relationship Table for the Digital File (0617). If the user selects delete for a MemoryWeb Application Dot-Tag (0618), the system deletes the association of MemoryWeb tag to Tag Data Block of Relationship Table for Digital File (0619).

In FIG. 29, the Application Dot-Tag Shape and Content is illustrated (0650). MemoryWeb Tags are illustrated as Application Dot-Tags within the Application to help the user organize their Digital Files with key components of related information such as people, date of file, location, collection, star ranking, and recipe. The MemoryWeb Application Dot-Tag is more than just text (as traditional tagging systems) because Memory-Web Application Dot-Tags act as mini search engines that allow the user to see how many matching files there are to that MemoryWeb Tag and if selected will take the user to the corresponding Application View to illustrate the linked search results of that Application Dot-Tag (as illustrated in FIG. 30). In essence, the Application Dot-Tags operate as mini search engines for the user's Digital Tags.

The structure of an Application Dot-Tag (0650) can take on an solid-line enclosed shape of a pill, dot or similar depiction (0651) and within the shape the name of the MemoryWeb Tag is displayed (0653) along with the number of Digital Files (0652) that are also associated with that same MemoryWeb Tag. FIG. 29 further illustrates more examples of the Application Dot-Tags. If the number of Digital Files associated with a specific MemoryWeb Tag is less than a certain number (e.g., 1000), the actual number of Digital Files associated with that MemoryWeb Tag is displayed. In FIG. 29, this is illustrated with an Application Dot-Tag that has 453 files that are associated with the location of Cologne, Germany (0654). However, if the number of Digital Files associated with a specific MemoryWeb tag are greater than the character length, a greater sign along with a number sequence that is less than the total number of associated Digital Files will be displayed (0655). In FIG. 29, this is illustrated with an Application Dot-Tag that has ">999" (0657) as the number of Digital Files with the exact same MemoryWeb Tag and if the name of the MemoryWeb tag is longer than the text sequence, only a portion of the MemoryWeb tag will be displayed along with an ellipse as illustrated with "Holiday Photos from . . ." (0658). Finally, the Application Dot-Tag may be illustrated with a dotted or similar distinction (as opposed to a solid line) to help indicate a partial relationship (0656). In the illustration in FIG. 29, the dotted line is to indicate that only some of the selected Digital Files have the MemoryWeb Tag of Frank Smith.

In FIG. 30, the Continuous Link of Dot Tag System is illustrated (0700). When a user selects an Application Dot-Tag, it will take them to the corresponding Application View that relates to the type of MemoryWeb Tag. The Continuous Link of Application Dot-Tag System begins when a user selects an Application Dot-Tag (0701).

If the Application Dot-Tag is a Person (0702), the system will send a request to display the requested information (0708) to the User Relationship Table (0300). A sample illustration of how a user can select a person Application Dot-Tag is in FIG. 31 (indicator 0764). For a person tag, the system receives data for that person from the User Relationship Table and displays the relationship data in a People



US 10,423,658 B2

21

Profile View (0709). A sample illustration of a selected Person Application Dot-Tag is in FIG. 32 (indicator 1430).

If the Application Dot-Tag is a Collection (0703), the system will send a request to display the requested information (0708) to the User Relationship Table (0300). A sample illustration of a collection Application Dot-Tag that can be selected is in FIG. 31 (indicator 0781). For a collection tag, the system receives data for that collection from the User Relationship Table and displays the relationship data in a Collection View (0710). A sample illustration of a selected Collection Application Dot-Tag within a Collection View is in FIG. 33 (indicator 1530).

If the Application Dot-Tag is a Location (0704), the system will send a request to display the requested information (0708) to the User Relationship Table (0300). A sample illustration of a location Application Dot-Tag that can be selected is in FIG. 31 (indicator 0768). For a location tag, the system receives data for that location from the User Relationship Table and displays the relationship data in a Location View (0711). A sample illustration of a selected Location Application Dot-Tag within a Location View is in FIG. 34 (indicator 1630).

If the Application Dot-Tag is a Date (0705), the system will send a request to display the requested information (0708) to the User Relationship Table (0300). A sample illustration of a date Application Dot-Tag that can be selected is in FIG. 31 (indicator 0766). For a date tag, the system receives data for that date from the User Relationship Table and displays the relationship data in Uploads View with that date filtered (0712). A sample illustration of a selected Date Application Dot-Tag within Uploads View is in FIG. 40 (indicator 0861).

If the Application Dot-Tag is a Recipe (0706), the system will send a request to display the requested information (0708) to the User Relationship Table (0300). For a recipe tag, the system receives data for that recipe from the User Relationship Table and displays the relationship data in a Recipe View with that date filtered (0713). A sample illustration of a selected Date Application Dot-Tag within Recipe View is in FIG. 36 (indicator 1800).

The Application is contemplated to have additional types of Application Dot-Tags (0707) in the future including Family Trees, Timespan, etc. and each of these MemoryWeb Tags will go through the same continuous link of Application Dot-Tag process. For an additional type of Application Dot-Tag, the system will receive data from the User Relationship Table and displays the relationship data in the corresponding view for that type of Application Dot-Tag (0714).

If within any of the Application Views the user selects a Digital File (0715), the Digital File is then displayed in a Slideshow View (0716) where the user can again select an Application Dot-Tag (0701) and start the continuous link of Application Dot-Tag functionality over again. Also within an Application View, if the user selects another Application Dot-Tag (0717), the entire continuous link of Application Dot-Tag functionality begins again and sends the request back to ask if the newly selected Application Dot-Tag is a person (0702).

In FIG. 31, the Slideshow view of a Digital File, Application Dot-Tags, and comments are illustrated (0750). When viewing a Digital File or group of Digital Files within the Slideshow Application View (0750), the selected Digital File is displayed in the center of the screen (0754). If the user wants to export this photo with all the associated Memory-Web Tags, they can select export (0751) which will initiate the Application Export System as illustrated in FIG. 49. If

22

the user wants to see the Digital File that is one file before the selected Digital File, they select the left arrow (0752) or they can select the right arrow (0753) to display the next photo in the sequence. Below the Digital File, the comments (0755) that are specific to that Digital file are depicted. If the user wants to edit the comments, they select edit (0756). If the user would like to see a moving slideshow of all the photos that are part of the group of Digital Files, they can select on the play sign (0757) or simply click the specific thumbnail of a Digital File (0758) to be displayed. The user can also have the slideshow in a full screen slideshow by selecting the full screen icon (0759). If the user wants to share the individual Digital file via email, they can select the mail icon (0760) or share it through a third party median provider, in this case Facebook (0761). A more detailed description on how the share functionality works is in FIG. 46 (indicator 1000).

In FIG. 31, each Application Dot-Tag that is associated with a Digital File is illustrated to the right of the Digital File under each major MemoryWeb Tag area. For this example, the People area (0763) has Application Dot-Tags of Jackson Smith (0780) and JC Smith (0764) associated with the selected Digital File. In the Dates area (0765), the Application Dot-Tag of August 28, 2013 (0766) is associated with the selected Digital File. In the Locations Area (0767), the Application Dot-Tag of Abe Lincoln Elementary School (0768) in the location associated with the selected Digital File. In the Collections Area (0769), the Application Dot-Tags of First Day of School (0770) and Jackson and JC Photos 2013 (0771) are associated with the selected Digital File. The Star Rankings Area (0782) shows that four out of five stars (0773) was selected for this Digital File. If the Digital File is associated with a Recipe (0774) the Application Dot-Tag would be illustrated in this area. The Media Type area indicates that this is a Memento (0776). If the user wants to delete this Digital File from the Application, they can select the Delete Item function (0779). If the user wants to edit the Application Dot-Tags, they can select the edit icon (0762) and all the MemoryWeb Tag areas will be in edit mode as later illustrated in FIG. 35. Finally, any original Digital File detail (e.g., file name, camera specifications, etc.) is illustrated (0778).

In FIG. 32, both of the People Application Views are illustrated. The first People Application View (1400) is used to display all the people that were created within the user's Application. This view can be seen by selecting "People" (1401) from any of the Application Views within the Application. The people can be listed in various sort orders though a drop-down (1402) such as: Newest to Oldest (added), Oldest to Newest (added), Alphabetical (A-Z), Alphabetical (Z-A), etc. Additional sorts are contemplated such as age sort. For each person, a thumbnail of their face along with their name is depicted. In this figure, Jon Smith (1403) and JC Jon Smith (1404) along with some other people are illustrated. Also, the user can determine if they want to have 20, 50 or 100 people shown at one time (1405) by selecting the corresponding number box. At the top of every Application View within the Application, the user can select Fast Search (1450) that is further described in FIG. 44. Also at the top of every Application View within the Application, the user can select Apply Filters (1451) that is further described in FIGS. 37-43.

In the second People Application View within FIG. 32, a single people profile (1430) is illustrated. The individuals name is displayed at the top of the page (1431) along with their Nicknames (1433), when they were Born (1434), who their parents are (1435), Siblings (1436), Children (1437),

US 10,423,658 B2

23

and the person's Biography (1438). The Person Profile Photo of that individual is illustrated (1439) and if the user wants to change the profile photo, they can change by selecting change profile photo (1440). For each person, the system can allow the user to quickly see all the tags that are associated to a person. In this example, the system illustrates that there are four photos (1452) associated with that person and will also illustrate thumbnails of each of the four photos (1446). These thumbnails can be selected and then the user will be taken to the slideshow view for that Digital File. If the user selects Collections (1441), all of the collections that the person has been tagged within will be displayed. If the user selects Facial Recognitions (1442), all the faces that are confirmed or need to be confirmed are displayed. This is the area where the user can select to confirm or deny a suggested facial recognition through the Third Party Facial Recognition System that is illustrated in FIG. 25. If the user selects Locations (1443), all of the Locations that the specific person has been tagged within will be displayed. If the user selects Family Relationships (1444), the seven people that the user is associated with will be displayed in a family chart or tree. If the user selects Recipe (1445), all the recipe's that the user has been tagged within will be displayed. If the user wants to edit any details within the individual people profile, they can select edit (1447) and all the fields will allow the ability to edit the details. If the user selects any of the Application Dot-Tags such as the individuals mother Jane Smith (Doe) (1449), the application will utilize the Continuous Link of Application Dot-Tag System (see FIG. 30) and take the user to an individual people profile view of Jane Smith (Doe). If the user selects View all People (1432), the Application will go back to the multiple People View (1400).

In FIG. 33, both of the Collection Application Views are illustrated. The first Collection Application View is used to display all the collections that were created within the user's Application (1500). This view can be seen by selecting "Collections" (1501) from any of the Application Views within the Application. The collections can be listed in various sort orders though a drop-down (1502) such as: Newest to Oldest (added), Oldest to Newest (added), Alphabetical (A-Z), Alphabetical (Z-A), etc. For each collection, a thumbnail of a Digital File from that collection depicted. In this figure, Smith Family Photos (1503), Europe Trip (1504), First Day of School (1505), Jackson and JC Photos 2013 (1506), and Baseball Games (1507) is illustrated. At the top of every Application View within the Application, the user can select Fast Search that is further described in FIG. 44. Also at the top of every Application View within the Application, the user can select Apply Filters that is further described in FIGS. 37-43.

In the second Collections Application View within FIG. 33, a single collection (1530) is illustrated. The individual collection name is displayed at the top of the page (1532). Thumbnails of each Digital File within the specific collections are illustrated. In this example, the system shows photos (1533) associated with the Smith Family Photos Collection. If the user wants to edit any Digital Files within the collection, they can select edit (1535) and then the user can add or delete any Digital Files as well as set the cover photo for a collection. If the user wants to share this collection (1534), they can select a method to share and this will take the user through the Share to Third Party Media Provider System illustrated later in FIG. 46. If the user selects View all Collections (1531), the Application will go back to the multiple Collection View (1500).

24

In FIG. 34, both of the Location Application Views are illustrated. The first Location Application View is used to display all the locations that were created within the user's Application (1600). This view can be seen by selecting "Locations" (1605) from any of the Application Views within the Application. The locations can be listed in various sort orders though a drop-down (1606) such as: Newest to Oldest (added), Oldest to Newest (added), Alphabetical (A-Z), Alphabetical (Z-A), etc. For each location, a thumbnail of a Digital File from that location depicted. In this figure, Wrigley Field (1601), Abe Lincoln Elementary School (1602), Home Sweet Home (1603), and Stonehenge (1604) is illustrated. What is also contemplated instead of a Digital File from that location is that a zoomed in image of a map from the specific location using the Third Party Geographical Mapping System later depicted in FIG. 47. At the top of every Application View within the Application, the user can select Fast Search that is further described in FIG. 44. Also at the top of every Application View within the Application, the user can select Apply Filters that is further described in FIGS. 37-43.

In the second Locations Application View within FIG. 34, a single location (1630) is illustrated. The individual location name is displayed at the top of the page (1632). Thumbnails of each Digital File within the specific collections are illustrated. In this example, the system illustrates a one photo (1633) taken at Wrigley Field (1634) that is associated with the location called Wrigley Field. If the user wants to edit any Digital Files within the collection, they can select edit (1637) and then the user can add or delete any Digital Files. If the user wants to share the Digital Files associated with this location (1636), they can select a method to share and this will take the user through the Share to Third Party Media Provider System illustrated later in FIG. 46. If the user selects View all Collections (1631), the Application will go back to the multiple Collection View (1600). As part of the individual Location View, an interactive map displaying a zoomed-in image of the specific location is displayed (1635).

In FIG. 35, the Uploads Application View and how it uses the Application Digital Tag Organizer System is illustrated (1700). Similar to the concept of writing certain information "on the back of a photo," the system's digital tagging system (also called Application Digital Tag Organizer) allows a user to select large amounts of Digital Files and add Digital Tags that can characterize and document the digital file(s). Digital Files can be individually or group organized at the same time for many tags including, but not limited to, a person's name, family relationships of the subjects to the user and between each other (e.g., mother/father), location, date, album, comments, document type (e.g., birth certificate, poetry), recipe, ranking or rating, and sharing rights. One or more Digital Files can be selected at the same time and displayed with an overlaid check mark when activated (1705 and 1710) and then Digital Tags can be assigned to a single file at a time or to a plurality of files at once. For example, if a user wishes to assign the tag "grandma" to 100 photos at once, the system provides a way for a user to select all 100 photos (1713) and enter the tag only once. In addition, the system does include an indicator that appears when a user hovers over the Digital File providing all the relevant Digital Tags associated with that specific Digital File (1737) and in this example it shows the caption of "Family Smith finally sees Stonehenge," that four People are tagged to this photo, one collection is tagged to this photo, there are zero people recognized through Facial Recognition, and the date of this photo is from December 21, 2013. If the user wants to delete

US 10,423,658 B2

25

a single photo from uploads, they can click on the “x” (1735) that is displayed when the user hovers over the Digital File thumbnail. When there are multiple Digital Files, the user can determine how many images are displayed at one time in the Items Per Page Buttons (1738) that include such numbers at 20, 50 and 100 on the page at the same time. When there is are more Digital Files that items per page, they are automatically grouped by pages and a Page Button (1739) can be selected to see the next set of Digital Files.

In the Uploads Location View, Digital Files can be directly uploaded to the Application by selecting Upload Files (1701) and the user will have the option to select the specific Digital Files to be uploaded from their Storage System. Users also have the option to install the Memory-Web Download Application that can be installed on either a Microsoft or MAC computer that will automatically upload and sync photos to and from the users Storage System to the MemoryWeb Application. Also displayed is the amount of space being used by the user within the Application (1702). Uploads of Digital Files can be listed in various sort orders though a drop-down (1703) such as: Newest to Oldest (added), Oldest to Newest (added), Alphabetical (A-Z), Alphabetical (Z-A), etc. In addition, the Digital Files can be sorted by File Batch Name (A-Z) or File Batch Name (Z-A). In FIG. 35, the sort of File Batch Name (A-Z) is selected (1703) and this provides three groups of Digital Files with the names File Folder C:/2013/Family Fun (1704), File Folder C:/2013/General (1706), and of File Folder C:/2013/First Day of School (1709). The File Batch Name is created when Digital Files are uploaded to the Application. The File Batch Name allows the user to see the file directory of how they had their Digital Files stored from another Storage System (e.g., on their computer hard drive) that allows for easier organization within the MemoryWeb Application. For example, in the sort of File Folder C:/2013/General (1706), two digital files (1707 and 1708) are illustrated that came from the exact same file folder path of the Users Storage system upon upload. At the top of every Application View within the Application, the user can select Fast Search that is further described in FIG. 44. Also at the top of every Application View within the Application, the user can select Apply Filters that is further described in FIGS. 37-43.

On the right side of FIG. 35, the associated Application Dot-Tags along with the ability to organize one or more Digital Files at the same time is illustrated. At the top of the screen, it shows how two Digital Files are selected (1712) that correspond to the selected (checked) Digital Files (1705 and 1710). Below this area illustrates all the Application Dot-Tags that are associated with the two selected Digital Files. The user has the option to select all (1713) the Digital Files being viewed in the Uploads View as well as selecting none (1714). By selecting all, the user can administer Application Dot-Tags to all the selected Digital Files at the same time. If the user wants to delete Digital Files, they can select the Digital Files to be deleted and then select the Delete Selection (1715) option.

In FIG. 35, each Application Dot-Tag that is associated with the selected Digital File(s) is illustrated. For this example, the People area (1716) has Application Dot-Tags of Jackson Smith (1734), Jane Smith (1733), Jon Smith (1731, and JC Smith (1717) that are associated with the two selected Digital Files (1710 and 1705). If the user wants to add a person to all the selected Digital Files, they can click on “+Add People” (1718) that will display a pop-up where the user can search for an existing person within the user’s existing people within the Application or add a new person to the user’s group of people within the Application. It is

26

contemplated to have a Facial Recognition suggestions appear in this area of the Application that will allow users to confirm or deny a recognized person to a specific Digital File. However, the current version of the People area is useful for situations where a face is not recognized, but the user desires to tag a person to a Digital File, they can manually assign a Person Application Dot-Tag to that Digital File for an existing person (e.g., if the person’s back is turned, it is a document that contains that person, a piece of art created by that person, etc.).

In the Dates area (1719), the organize functionality for assigning a Digital Tag of a date within the Digital File(s) is illustrated. Upon upload, the date when the Digital File was created is automatically read by the Application and illustrated as an Application Dot-Tag (1720 and 1730). As illustrated in the Dates area, the Application Dot-Tags of July 4, 2013 (1720) and August 28, 2013 (1730) are illustrated as they correspond to the dates that are associated with each of the selected Digital Files. If the user wants to change the date for all the selected Digital Files, they can click on “+Add/Edit Date” (1721) that will display a pop-up where the user can add a new date for the selected digital files within the Application. This is a very useful feature when an incorrect date is assigned to a digital file (e.g., if a photo from October 31, 1951 was digitized on December 31, 2012, the digitized dates would show as an Application Dot-Tag that the user can change in this section to the correct date of October 31, 1951).

In the Locations area (1722), the organize functionality for assigning Digital Tags of locations within the Digital File(s) is illustrated. Upon upload, the GPS location of where the Digital File was created (if applicable) is automatically read by the Application and illustrated as an Application Dot-Tag for locations of the selected files. In the locations area, the Application Dot-Tags of Abe Lincoln Elementary School (1723) and Wrigley Field (1735) are illustrated as they correspond to the locations that are associated with each of the selected Digital Files. If the user wants to change the location for all the selected Digital Files, they can click on “+Add/Edit location” (1724) that will display a pop-up where the user can search for an existing location within the user’s existing locations within the Application or add a new location to the user’s group of locations within the Application. Another added function to assign a location to the selected Digital Files is to use Search with Map (1732) that utilizes the Application’s Third Party Geographical Mapping System that is further illustrated in FIG. 47 that allows the user to type in any relevant information (e.g., location name, address, state, etc.) and then the Application will search and pinpoint that location on a map.

In the Collections Area (1725), the organize functionality for assigning Digital Tags of albums within the Digital File(s) is illustrated. Digital Files can be associated to multiple albums. As illustrated in the Collections area, the Application Dot-Tags of First Day of School (1726), Jackson and JC Photos 2013 (1727), and Baseball Games (1728) are associated with the Collections for the selected Digital Files. If the user wants to add a Collection to all the selected Digital Files, they can click on “+Add/Create Collection” (1729) that will display a pop-up where the user can search for an existing Collection within the user’s existing Collections within the Application or add a new Collection to the user’s group of Collections within the Application.

Within the Uploads View, the ability to perform similar tagging of Star Rankings, Recipes, Family Relationships, and Media Types/Document Type are also contemplated as part of the Application Digital Tag Organizer System. For

US 10,423,658 B2

27

Star Rankings, it is contemplated to assign MemoryWeb Tags of star rankings within the Digital File(s). Upon upload, if the star ranking is already contained within the Digital File, it is automatically read by the Application and illustrated as an Application Dot-Tag. The user can select one or more Digital Files and then apply a star ranking between 1 and 5 in the Uploads Application View. For Recipes, it is contemplated to assign MemoryWeb Tags of Recipes to Digital File(s). The user can select one or more Digital Files and then type within the "Recipe" search bar to either add a new recipe or associate the Digital File(s) to an existing recipe. Digital Files can be associated to multiple recipes. For Media Type/Document Type, the user can choose from a list of common document types (e.g., Birth Certificate, Death Certificate, Marriage Certificate, etc.) can be utilized for common document type associations. Once a document type is assigned to one or more Digital Files, the document type appears within an Application Dot-Tag. Digital Files can be associated to multiple document types.

In FIG. 36, an individual recipe view (1800) allows one to see all the information that is associated with a specific recipe. The name of the specific recipe is displayed at the top of the page (1801) and the People Profile picture of the "chef" associated with the recipe is illustrated (1804). If no chef is assigned, the user can select the "+add/edit chef" (1803) to either choose an existing person from the user's People in the Application or add a new person.

The view of various Digital Files within the recipe (1808) along with scrolling through the Digital Files using the arrow icons (1814 and 1815), the ability to share this recipe with others by selecting the sharing icon (1812). As the Digital Files are selected on using the film strip on the bottom, a larger thumbnail illustrating the Digital File is shown (1807). The recipe view also allows you to choose a chef for the recipe from the people within the user's Application. When a chef is selected, the profile picture (1804) of the person along with their name as an Application Dot-Tag (1816) is displayed. For each recipe, the user can insert the ingredients (1809), directions (1810), and comments (1811). Each of these areas can be edited by selecting the edit button (1813). Another contemplated feature allows the user to apply star rankings for the recipe as well as categorize they type of recipe (e.g., appetizer, entrée, etc.). It is further contemplated that the Digital Files within the individual recipe view may also include videos where they can be watched showing the chef making the recipe. It is also contemplated that the recipes will be interactive with external sources (e.g., the Food Network) so that recipes can be shared or imported with the Application and that visitors to the account will be able to post/share comments about the recipe. It is further contemplated that the user can print the recipe using a print icon.

In FIG. 37, the Advanced Filters System is illustrated (0800). This feature allows the user to narrow the Digital Files being viewed within the Application Views by searching the user's entire collection of MemoryWeb Tags within the Application and then displaying the filtered information in one of the Application Views. Advanced Filters System can be filtered by such items as key words (or plurality of key words), event names, location, people, albums, star rating, file type, document type, and dates. A user may filter based on more than one criterion at a time. To help users quickly identify Digital Files that may still need to be organized, the advanced search filter also allows users to isolate files that have no date, no location, no people, no specific date/range, and no upload date information or are lacking any other tag. The Advanced Search Filter can be

28

used within many of the views the Application to narrow the set of Digital Files being viewed. For example, you can use the Advanced Filter Button to only show the map view of locations a specific person has traveled in their lifetime.

When a user selects the "Advanced Filters" from almost any Application View (0801) (the button can be seen in FIGS. 32, 33, 34, 35, and 36), a pop-up will appear that allows the user to type in text into the text box (0802). As the user is typing, the system sends a request (0803) to the User Relationship Table (0300) to look up any possible MemoryWeb Tag matches. The system will then produce the request (0804) and illustrate the potential matches of the filters to the user (0805). As the user types in another letter, the process of sending a request (0803) to the User Relationship Table (0300), producing results (0804) and producing a new set of results (0805) is re-run. If the user selects one of the suggested MemoryWeb tags (0806) and then selects to apply this filter (0807), the system will send this request to the User Relationship Table (0300). This portion of the Advanced Filter System is further illustrated in FIG. 38.

If the Advanced Filter System is applied within the Uploads View, the system retrieves data for the applied filter(s) from the User's Relationship Table and displays the relationship data (0809). An example of this output is later illustrated in FIG. 39 (indicator 0850).

If the Advanced Filter System is applied within the Collections View, the system retrieves data for the applied filter(s) from the User's Relationship Table and displays the relationship data (0810). An example of this output is later illustrated in FIG. 39 (indicator 0852).

If the Advanced Filter System is applied within the Locations View, the system retrieves data for the applied filter(s) from the User's Relationship Table and displays the relationship data (0811). An example of this output is later illustrated in FIG. 40 (indicator 0856).

If the Advanced Filter System is applied within the People View, the system retrieves data for the applied filter(s) from the User's Relationship Table and displays the relationship data (0814). An example of this output is later illustrated in FIG. 39 (indicator 0854).

If the Advanced Filter System is applied within other contemplated views within the Application such as Recipe, Family Trees, Timespan, etc. the system retrieves data for the applied filter(s) from the User's Relationship Table and displays the relationship data (0812).

If the user decides to add an additional filter (0813), the process is repeated when the user selects "Advanced Filter" (0801) while the pre-existing filters are still applied. An example of this process is later illustrated in FIG. 42 and FIG. 43. If the user selects an Application Dot-Tag, then the continuous Link of Application Dot-Tags System is engaged as illustrated in FIG. 30 (0700).

In FIG. 38, the process of the Adding the First Application Dot-Tag using the Advanced Filter is illustrated. This is a visual depiction of the process that was illustrated in FIG. 37. In Stage 1 (0830), the user selects "Apply Filters." This takes the user to Stage 2 where the Application generates the Apply Multiple Filters box (0831). The user can then type in the alphanumeric text search criteria within the Advanced Filters text box (0838). In this example, the word "Smith" was typed within the text box. As the alphanumeric text is typed within the text box, the application automatically generates the available filters (0836) that meet the criteria. In this example, the user selects the Application Dot-Tag of a person named JC Smith (0832). In Stage 3, "Apply" is selected and then the application lists the Application Dot-

US 10,423,658 B2

29

Tag of a Person named JC Smith as a current active filter (0837). This filter will then be applied to each Application view that is further illustrated in FIGS. 39 through 41. If the user wants to clear all the filters, they can select “clear filters” (0839).

In FIG. 39, an illustration of the results for a Single Application Dot-Tag Filter for each Application view is depicted. If the Advanced Filter is applied in the Uploads Application View (0850), the filter of “JC Smith” (0851) is illustrated and only the Digital Files that contain the person JC Smith are illustrated. If the Advanced Filter is applied in the Collections Application View (0852), the filter of “JC Smith” (0853) is illustrated and only the Collections that contain the person JC Smith are illustrated. If the Advanced Filter is applied in the People Application View (0854), the filter of “JC Smith” (0855) is illustrated and only the person named JC Smith is illustrated.

In FIG. 40, an illustration of the results for a Single Application Dot-Tag Filter for a date within the Uploads Application View is depicted (0860). If the Advanced Filter is applied using a date filter within the Uploads Application View (0861), the filter date of “2013-07-04” (0876) is illustrated and only the Digital Files that contain that date are illustrated.

In FIG. 41, an illustration of the results for a Single Application Dot-Tag Filter in the Location Application View is depicted (0870). Within the Location Application View the Digital Files are displayed within an interactive map (Google map shown as an example). The Location View can also provide additional outputs such as a journey route that identifies the specific locations for an event or trip that can be customized by users. In this view, individual or groups of Digital Files are illustrated as photo thumbnails (see indicators 0874 and 0875) on the map and the user can select the thumbnail to see all the Digital Files with the same location (as seen FIG. 34 (indicator 1630)) or the user can use the interactive map and narrow the map view by either using the zoom in/zoom out bar (0876) on the left or simply selecting the map. Note that the pinned locations include a thumbnail of the Digital File (or Collection cover) and the number of Digital Files for that location.

If the Advanced Filter is applied in the Locations Application View, the filter of “JC Smith” (0872) is illustrated and only the Digital Files that contain the person JC Smith are illustrated with their geographic location on the map. The user can select to clear this filter (0873) or see this Advanced Filter with the view of locations as a list (0871). In FIG. 41, there are two illustrated on the map (0874 and 0875).

In FIG. 42, the process of the Adding another Application Dot-Tag using the Advanced Filter is illustrated. Continuing on the process that was illustrated in FIG. 38 where the first Application Dot-Tag filter of “Person: JC Smith” was applied, the ability to add a second Application Dot-Tag is further illustrated in FIG. 42. As with FIG. 38, FIG. 42 is a visual depiction of the process that was illustrated in FIG. 37. In Stage 1 (0880), the user selects “Apply Filters.” This takes the user to Stage 2 where the Application generates the Apply Multiple Filters box (0881). The user can then type in the text search criteria for the second Advanced Filter within the Advanced Filters text box. In this example, the word “Abe” was typed within the text box. As the alphanumeric text is typed within the text box, the application automatically generates the available filters that meet the criteria. In this example, the user selects the Application Dot-Tag of a location named Abe Lincoln Elementary School (0882). In Stage 3 (0883), the application lists the Application Dot-Tags of both the Person named JC Smith (0884) as well as

30

the location of Abe Lincoln Elementary School (0885) as part of the Current Active Filters. The user then selects “Apply” (0886) to see these filters illustrated in the Application Views. This filter will then be applied to each Application view as previously illustrated in FIGS. 39 through 41.

In FIG. 43, an illustration of the results for Adding Another Application Dot-Tag Filter in the Location Application View is depicted (0890). Continuing on the process that was illustrated in FIG. 42, in FIG. 43 (0890) the Application Dot-Tag filters of “Person: JC Smith” (0891) and “Location: Abe Lincoln Elementary School” (0892) are illustrated. There is one overlapping location that contains both filters for a Digital File that is illustrated on the map (0893).

In FIG. 44, the Fast Search System is illustrated (0900). Throughout the Application, groups or individual Digital Files can be searched quickly using the Fast Search bar that is at the top of each Application View. Once a key word or phrase is entered into this area, the user’s entire collection of Digital Tags within the Application that includes all the Digital tags are searched for potential matches. This feature allows the user to search their entire collection of MemoryWeb Tags within the Application and then displays the information grouped by people, collections, locations, documents, and recipes. The Fast Search System can be searched by such items as key words (or plurality of key words), event names, location, people, albums, star rating, file type, document type, and dates.

When a user selects the Fast Search bar from almost any Application View (0901), the user can type in alphanumeric text into the text box (0902). As the user is typing, the system sends a request (0903) to the User Relationship Table (0300) to look up any possible MemoryWeb Tag matches. The system will then produce the request (0904) and illustrate the potential matches by category for the user (0905). As the user types in another letter, the process of sending a request (0903) to the User Relationship Table (0300), producing results (0904) and producing a new set of results (0905) is re-run. If the user selects one of the suggested MemoryWeb tags (0906), the system will send this request to the User Relationship Table (0300). This process is further illustrated in FIG. 45.

If the user selects a person Fast Search tag, the system retrieves data for the person from the User’s Relationship Table and displays the relationship data (0907) in the Person Profile View as illustrated in FIG. 32 (indicator 1430).

If the user selects a collection Fast Search tag, the system retrieves data for the collection from the User’s Relationship Table and displays the relationship data (0908) in the Collection View as illustrated in FIG. 33 (indicator 1530).

If the user selects a location Fast Search tag, the system retrieves data for the location from the User’s Relationship Table and displays the relationship data (0909) in the Location View as illustrated in FIG. 34 (indicator 1630).

If the user selects a date Fast Search tag, the system retrieves data for the date from the User’s Relationship Table and displays the relationship data (0910) in the Uploads View as illustrated in FIG. 40 (indicator 1861).

If the Fast Search System is applied within other contemplated views within the Application such as Family Trees, Timespan, etc. the system retrieves data for the search from the User’s Relationship Table and displays the relationship data (0911). As part of the contemplated search process is to also search comments related to a Digital File.

In FIG. 45, the process of using the Keyword Fast Search is illustrated. This is a visual depiction of the process that was illustrated in FIG. 44. In Stage 1 (0930), the user selects

US 10,423,658 B2

31

the Fast Search bar at the top of one of the Application Views. This takes the user to Stage 2 (0931) where the user can then type in the alphanumeric text search criteria within the Fast Search text box (0932). In this example, the word "Wrigley" was typed within the text box. As the alphanumeric text is typed within the text box, the application automatically generates the available MemoryWeb Tag results (0933) that meet the criteria. Note how the results are organized by various MemoryWeb Tag categories such as Person, Collection, Location, Recipe, and comments. In Stage 3 (0934), the user selects one of the results. In this example, the user selects the location of Wrigley Field (0935). When the user selects a specific MemoryWeb Tag, it takes them to Stage 4 where the information related to that tag is displayed in the corresponding view as discussed within FIG. 44. For the example where the user selected the Location of Wrigley Field, the user was taken to the individual locations Application View where the location of Wrigley Field and the corresponding Digital Files are displayed (0936).

In FIG. 46, the Share to Third Party Media Provider System (1000) is illustrated. This feature allows the user to share Digital Files from MemoryWeb directly to a third party application. The process begins when the user selects to share a Digital File or collection of Digital Files within the MemoryWeb Application (1001). Examples of where the user can select share can be seen in FIG. 31 (indicator 0760), FIG. 33 (indicator 1534), FIG. 34 (indicator 1636), and FIG. 36 (indicator 1812). Once the request is made, the system requests the Digital File and Tag Data Blocks (1002) from the User Relationship Table (0300). The system then retrieves the Digital File from the User Relationship Table (1003). At the same time, the system will also retrieve the Digital Tags from the Relationship Table (1004). The system will then inject the tags to the corresponding EXIF Tag Data Blocks (1005). The mapping of the EXIF Tag Data Blocks and those of MemoryWeb Data Blocks is illustrated in FIG. 22. Note, for any tags that were modified within the MemoryWeb application, only the new tag information will be transferred into the EXIF Tag Data Blocks. The system then combines the EXIF Tag Data Blocks and embeds them within the Original Digital File (1006). The application then exports the Digital File with the new EXIF Tag Data Blocks using the Application Export System (1300) which then sends the Digital File outside the MemoryWeb Application to the Third Party Media Provider (0501).

In FIG. 47, the Third Party Geographical Mapping System is illustrated (1100). When Digital Files are imported into MemoryWeb, if there is any GPS data available from the EXIF Tags (See FIG. 22 (indicators 0330, 0331, 0332, and 0333)), the system will utilize this data and automatically create a MemoryWeb location tag within the Application (See FIG. 22 (indicators 0368, 0369, 0370 and 0371)). However, if the GPS coordinates were missing from a Digital File when it was imported into the Application (See FIG. 50 (indicators 1418 and 1419)), the user can add the Location (which the application will automatically add the associated GPS tags) to the Digital File using the Application Digital Tag Organization System (see FIG. 28). As locations are associated with a Digital File, the Application can interact with a Third Party Geographical Mapping System to pull maps that correspond to the exact location of Digital Files that have a location tag (see FIG. 34 (indicator 1630 and FIG. 40, indicator 0875)). In addition, the Application utilizes a world map view to illustrate all the locations

32

that are associated to one or more Digital Files for a user within the Location Application View (see FIG. 41 (indicator 0880)).

The Third Party Geographical Mapping System begins when a Location Application Dot Tag (1102) is selected (1104), the system will send a request (1105) to the User Relationship Table (0300). Examples of when Location Application Dot-Tags can be selected are illustrated in FIG. 31 (indicator 0768 and FIG. 35, indicators 1723 and 1735). In FIG. 47 if the Locations Application View is selected (1103), the system will send a request (1105) to the User Relationship Table. The Location Application View can be selected from almost any Application view as illustrated in FIG. 34 (indicator 1605). When either a single location or the world map view is selected, the system will retrieve the data (1108) from the User Relationship Table (0300) and send a request (1106) to the Third Party Geographical Mapping Provider (1101) who generates the map request and then sends the information back to the system for the specific location (1107). At the same time, the Application Dot-Tags and Digital Files associated with the location or map request are retrieved and then sent (1109) to the Locations Application view. The system will combine the map information along with the Application Dot-Tags and Digital Files and display this information within the Location Application View (1100). Examples of a single Location Application View can be seen in FIG. 34 (indicator 1630) and FIG. 40 (indicator 0875), and an example of a world map view can be seen in FIG. 41 (indicator 0880).

In FIG. 48, the Share to Individual System is illustrated (1200). The Share to an individual person or a group of people starts when a user initiates share of a Digital File or a Collection of Digital Files (1201). Examples of where the user share functions are illustrated are in FIG. 31 (indicators 0760 and 0761), FIG. 33 (indicator 1534), FIG. 34 (indicator 1636), and FIG. 36 (indicator 1812). Next, the system requests the Digital File and Tag Data Blocks (1202) from the User Relationship Table (0300). The system will retrieve corresponding Digital File (or collection of Digital Files) (1203) from the User Relationship Table.

At the same time, the system will also retrieve the Digital Tags of the Digital File from the Relationship Table (1204). The system will then inject the tags to the corresponding EXIF Tag Data Blocks (1206). The mapping of the EXIF Tag Data Blocks and those of MemoryWeb Data Blocks is illustrated in FIG. 22. Note, for any tags that were modified within the MemoryWeb application, only the new tag information will be transferred into the EXIF Tag Data Blocks. The system then combines the EXIF Tag Data Blocks and embeds them within the Original Digital File (1205). The application then exports the Digital File with the new EXIF Tag Data Blocks using the Application Export System (1300) which then sends the Digital File outside the MemoryWeb Application to an Individual or Group of People (1207).

In FIG. 49, the Application Export System is illustrated (1300). The Application Export System starts when a user selects the export of a Digital File within the application (1302) or has installed the MW Automatic Uploader/Downloader Application (1308). An example of where the user can select the export of a Digital file within the Application is FIG. 31 (indicator 0751). If the user has installed the MW Automatic Uploader/Downloader Application, the export functionality of the user's entire collection of Digital Files will be downloaded to the User's desired folder on their computer with the Digital Tags embedded within the Digital Files. If neither a user initiated download nor the MW

US 10,423,658 B2

33

Automatic Uploader/Downloader Application is not used, then the Application Export is not initiated (**1309**). For either a user initiated download or one using the MW Automatic Uploader/Downloader Application, the system requests the Digital File(s) and Tag Data Blocks (**1303**) from the User Relationship Table (**0300**). The system will retrieve corresponding Digital File (or collection of Digital Files) (**1304**) from the User Relationship Table. At the same time, the system will also retrieve the Digital Tags of the Digital File from the User Relationship Table (**1305**). The system will then inject the tags to the corresponding EXIF Tag Data Blocks (**1306**). The mapping of the EXIF Tag Data Blocks and those of MemoryWeb Data Blocks is illustrated in FIG. 22. Note, for any tags that were modified within the MemoryWeb application, only the new tag information will be transferred into the EXIF Tag Data Blocks. The system then combines the EXIF Tag Data Blocks and embeds them within the Original Digital File(s) (**1307**). The application then exports the Digital File(s) with the new EXIF Tag Data Blocks to the desired Storage System of the user (**1301**).

In FIG. 50, there are three charts for the Digital File Image File Directory Data Blocks of JPG Photo within Microsoft Before and After MemoryWeb. This Figure is meant to demonstrate how the EXIF Tag Data Blocks for a Digital File (in this example a JPG file) prior to the use of MemoryWeb Application appear and then how these EXIF Tag Data Blocks are populated with Digital Tags upon export from the MemoryWeb Application.

The first chart illustrates common EXIF Tags (Data Blocks) (**1401**) and lists certain common the EXIFTool Family 1 Group names that are displayed in the file properties of a JPG file when using Microsoft Windows (these are the same EXIF Tag Blocks that were illustrated in FIG. 22 (indicator **1320**)). In the second chart (**1402**), the Digital Tags associated with the original Digital File are displayed. In the third chart (**1403**), the updated Digital Tags for the same original Digital File once exported from the MemoryWeb Application is displayed.

In the second chart (**1402**), the original Digital File prior to import to the MemoryWeb Application did not have Digital Tags for data blocks such as Description Rating (**1416**), Description Comments (**1417**), GPS Latitude (**1418**), GPS Longitude (**1419**). Also in the second chart the Digital Tags for the data blocks of File Folder Path (**1420**) and File Date Created (**1421**) are illustrated.

In the third chart (**1403**), the original Digital File that was exported from the MemoryWeb Application now contains new or modified Digital Tags for certain data blocks. For example, a star rating of four out of five stars (**1410**) with the new MW Modified Digital File is now associated with the Description Rating (**1404**) where it was blank (**1416**) with the original file before using the MemoryWeb Application.

Another example is the listing of MemoryWeb Tags within the Description Comments data block (**1411**) as: CAPTION: Jackson and JC's first day at school!, PERSON: Jackson Smith, JC Smith, LOCATION NAME: Abe Lincoln Elementary School, COLLECTION: First Day of School, COLLECTION: Jackson and JC Photos 2013, DATE: 8/28/2013. All of these Digital Tags are now associated with the Description Comments (**1405**) where it was blank (**1417**) with the original file before using the MemoryWeb Application.

Also updated in the MW Modified Digital File are the GPS Latitude (**1412**) and GPS Longitude (**1413**) as Digital Tags that were assigned in the MemoryWeb Application using the location feature with the Application Digital Tag Organizer System. These tags now replace the blank tags

34

(indicators **1418** and **1419**) that were in the original file before using the MemoryWeb Application.

A final example is how the date was modified in the MemoryWeb Application where a new date of August 28, 2013 (**1415**) was assigned to the Digital File. This replaced the old date that was originally tagged with a date of November 1, 2013 (**1421**). In a typical Digital File, only the date and perhaps the GPS location if taken with certain newer photo device is pre-populated in a Digital File. For the example in FIG. 50, the Digital File may have been created or scanned on November 1, 2013, but with the MemoryWeb Application Digital Tag Organizer System the user was able to correctly assign the date the photo was taken and now this date is always part of the Digital File within the MemoryWeb Application, but also when the Digital File is exported from MemoryWeb.

A benefit of the Export System is that users can export a single Digital File or their entire set of Digital Files (using the MW Automatic Uploader/Downloader Application), with all the updated Digital Tags from the MemoryWeb Application embedded within the Digital File(s). This feature is unique as it will allow the users to back up their files to another source (e.g., external computer hard drive) or to transport it to another venue (e.g., another website that is used for viewing and/or sharing Digital Files such as a social media website) where it can be viewed with these Digital Tag attributes. This export feature can provide users with the advantage of never losing key data that was stored simply because the user chooses to move its Digital Files to a new digital system.

The application also contemplates the use of a Family Tree Application View where the individual people that have been created within the Application can be displayed with family relationships. This view can illustrate interactive family trees where one can see the family tree of an individual or family. Any family relationships created in the user's personal profile are already pre-populated by the Application for the Family Tree View. If a user selects on an individual within the family tree, it will take them to the people profile Application View of that person. Family Trees can quickly be viewed with the family tree drop-down sort feature. As with other areas within the Application, the family tree view can be narrowed down using an Advanced Filters System. For matching family members, the system will have drag/drop functionality to make new associations to a family tree. It is also contemplated that various family tree views could be displayed (e.g., pedigree chart, fan chart, directs descendants chart, etc.). In addition, it is contemplated that family tree relationships from either data files (e.g., GEDCOM files) or other sources (e.g., Family Search database) would either be imported into the user's versions of the Application or utilize these sources in associating the family tree information.

Another Application View that is contemplated is Timespan or Timeline. The Timeline Application View will have an interactive timeline to display the dates within the Digital Files of the Application for a user. The timeline view acts as an interactive filter or funnel of Digital Files whereas when the user starts to define the parameters of dates towards the bottom, the information above it is filtered to display the major groups of Digital Files that meets the selected date range criteria in various formats until you are able to view an individual Digital File. This funnel approach is designed to allow the user to appreciate the vast amount of data that can be associated with a date range, but then allow them to filter the information with the user's desired criteria. This will be a very useful tool when users want to see the growth



US 10,423,658 B2

35

and progress of an individual as well as memorialize a lifetime of a friend or family member.

While the disclosure is susceptible to various modifications and alternative forms, specific exemplary embodiments thereof have been shown by way of example in the drawings and have herein been described in detail. It should be understood, however, that there is no intent to limit the disclosure to the particular forms disclosed, but on the contrary, the intention is to cover all modifications, equivalents, and alternatives falling within the spirit and scope of the disclosure as defined by the appended claims.

The invention claimed is:

1. A computer-implemented method of displaying at least a portion of a plurality of (i) digital photographs, (ii) videos, or (iii) a combination of (i) and (ii), each of the digital photographs and videos being associated with a geotag indicative of geographic coordinates where the respective digital photograph or video was taken, the method comprising:

displaying an application view on a video display device including displaying a plurality of selectable elements, the plurality of selectable elements including a location selectable element;

responsive to a click or tap of the location selectable element, displaying a map view on a video display device, the displaying the map view including displaying:

(i) a representation of an interactive map;

(ii) a first location selectable thumbnail image at a first location on the interactive map, the first location being associated with the geographic coordinates of a first geotag, a first set of digital photographs and videos including all of the digital photographs and videos associated with the first geotag;

(iii) a first count value image partially overlapping the first location selectable thumbnail image, the first count value image including a first number that corresponds to the number of digital photographs and videos in the first set of digital photographs and videos;

(iv) a second location selectable thumbnail image at a second location on the interactive map, the second location being associated with the geographic coordinates of a second geotag, a second set of digital photographs and videos including all of the digital photographs and videos associated with the second geotag; and

(v) a second count value image partially overlapping the second location selectable thumbnail image, the second count value image including a second number that corresponds to the number of digital photographs and videos in the second set of digital photographs and videos;

responsive to a click or tap of the first location selectable thumbnail image, displaying a first location view on the video display device, the displaying the first location view including displaying (i) a first location name associated with the first geotag and (ii) a scaled replica of each of the digital photographs and videos in the first set of digital photographs and videos, the displayed scaled replicas of each of the digital photographs and videos not being overlaid on the interactive map; and

responsive to a click or tap of the second location selectable thumbnail image, displaying a second location view on the video display device, the displaying the second location view including displaying (i) a second

36

location name corresponding to the second geotag and (ii) a scaled replica of each of the digital photographs and videos in the second set of digital photographs and videos, the displayed scaled replicas of each of the digital photographs and videos in the second set of digital photographs and videos not being overlaid on the interactive map.

2. The computer-implemented method of claim 1, wherein the first location selectable thumbnail image includes a scaled representation of at least one of the digital photographs in the first set of digital photographs, and wherein the second location selectable thumbnail image includes a scaled representation of at least one of the digital photographs in the second set of digital photographs.

3. The computer-implemented method of claim 1, further comprising responsive to a click or tap of a first one of the displayed scaled replicas in the first location view, displaying a first digital photograph associated with the first scaled replica in the first location view and a first map image indicating the geographic coordinates of the first geotag.

4. The computer-implemented method of claim 3, further comprising responsive to a click or tap of a first one of the displayed scaled replicas in the second location view, displaying a first digital photograph associated with the first scaled replica in the second location view and a second map image indicating the geographic coordinates of the second geotag.

5. The computer-implemented method of claim 1, wherein the plurality of selectable elements further includes a people selectable element, the method further comprising responsive to a click or tap of the people selectable element, displaying a people view, the displaying the people view including displaying:

(i) a first person selectable thumbnail image including an image of a face of a first person, a third set of digital photographs and videos including digital photographs and videos associated with the first person;

(ii) a name associated with the first person, the name associated with the first person being displayed adjacent to the first person selectable thumbnail image;

(iii) a second person selectable thumbnail image including an image of a face of a second person, a fourth set of digital photographs and videos including digital photographs and videos associated with the second person; and

(iv) a name associated with the second person, the name associated with the second person being displayed adjacent to the second person selectable thumbnail image.

6. The computer-implemented method of claim 5, wherein the displaying the people view further includes displaying the first person selectable thumbnail image and the second person selectable thumbnail image in an alphabetical order based on the names associated with first person and the second person.

7. The computer-implemented method of claim 5, further comprising responsive to a click or tap of the first person selectable thumbnail image, displaying a first person view, the displaying the first person view including displaying (i) the name associated with the first person and (ii) a scaled replica of each of the digital photographs and videos in the third set of digital photographs.

8. The computer-implemented method of claim 7, wherein the displaying the first person view further includes displaying a first-person-location selectable element.

9. The computer-implemented method of claim 8, further comprising responsive to a click or tap of the first-person-



US 10,423,658 B2

37

location selectable element, displaying a representation of all locations having a digital photograph or video associated with the first person.

10. The computer-implemented method of claim 7, further comprising responsive to a click or tap of the second person selectable thumbnail image, displaying a second person view, the displaying the second person view including displaying (i) the name associated with the second person and (ii) a scaled replica of each of the digital photographs and videos in the fourth set of digital photographs.

11. The computer-implemented method of claim 10, wherein the displaying the second person view further includes displaying a second-person-location selectable element.

12. The computer-implemented method of claim 11, further comprising responsive to a click or tap of the second-person-location selectable element, displaying a representation of all locations having a digital photograph or video associated with the second person.

13. The computer-implemented method of claim 1, wherein the plurality of selectable elements further includes an album selectable element, the method further comprising responsive to a click or tap of the album selectable element, displaying an album view, the displaying the album view including displaying:

- (i) a first album selectable thumbnail image including a scaled representation of at least one digital photograph in a third set of digital photographs and videos that

38

includes all of the digital photographs and videos associated with a first album tag;

- (ii) a first album name associated with the first album, the first album name being displayed adjacent to the first album selectable thumbnail image;

- (iii) a second album selectable thumbnail image including a scaled representation of at least one digital photograph in a fourth set of digital photographs and videos that includes all of the digital photographs and videos associated with a second album tag; and

- (ii) a second album name associated with the second album, the second album name being displayed adjacent to the second album selectable thumbnail image.

14. The computer-implemented method of claim 13, further comprising responsive to a click or tap of the first album selectable thumbnail image, displaying a first album view, the displaying the first album view including displaying (i) the first album name associated with the first album and (ii) a scaled replica of each of the digital photographs and videos in the third set of digital photographs and videos.

15. The computer-implemented method of claim 14, further comprising responsive to a click or tap of the second album selectable thumbnail image, displaying a second album view, the displaying the second album view including displaying (i) the second album name associated with the second album and (ii) a scaled replica of each of the digital photographs and videos in the fourth set of digital photographs and videos.

\* \* \* \* \*

(12) **United States Patent**  
**Desmond et al.**

(10) **Patent No.:** **US 10,621,228 B2**  
(45) **Date of Patent:** **\*Apr. 14, 2020**

(54) **METHOD AND APPARATUS FOR MANAGING DIGITAL FILES**

(71) Applicant: **NCM IP Holdings, LLC**, Glen Ellyn, IL (US)

(72) Inventors: **Christopher J. Desmond**, Glen Ellyn, IL (US); **Nancy L. Desmond**, Glen Ellyn, IL (US); **L. Michael Taylor**, Chicago, IL (US)

(73) Assignee: **NCM IP Holdings, LLC**, Glen Ellyn, IL (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.  
  
This patent is subject to a terminal disclaimer.

(21) Appl. No.: **16/578,238**

(22) Filed: **Sep. 20, 2019**

(65) **Prior Publication Data**  
US 2020/0026727 A1 Jan. 23, 2020

**Related U.S. Application Data**

(63) Continuation of application No. 16/536,300, filed on Aug. 8, 2019, which is a continuation of application (Continued)

(51) **Int. Cl.**  
**G06F 16/58** (2019.01)  
**G06F 16/901** (2019.01)  
(Continued)

(52) **U.S. Cl.**  
CPC ..... **G06F 16/5866** (2019.01); **G06F 16/51** (2019.01); **G06F 16/901** (2019.01); **G06F 16/907** (2019.01); **G06F 3/0481** (2013.01)

(58) **Field of Classification Search**  
CPC ... G06F 16/5866; G06F 16/907; G06F 16/901  
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,694,514 A 12/1997 Evans  
6,629,104 B1 9/2003 Parulski  
(Continued)

FOREIGN PATENT DOCUMENTS

CN 102591922 B 10/2015  
EP 2466869 A3 2/2017  
(Continued)

OTHER PUBLICATIONS

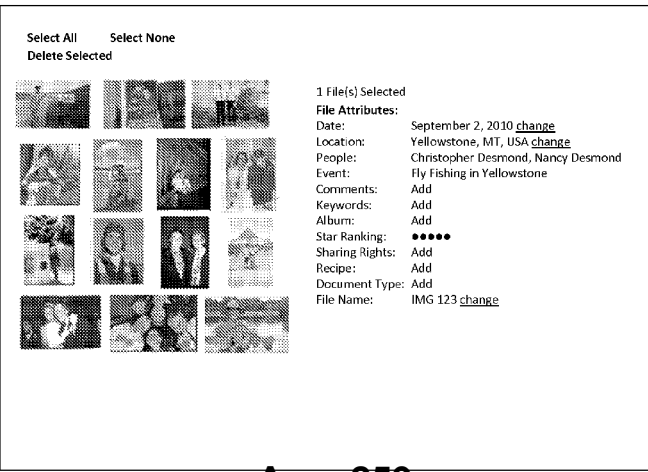
Kustanowitz et al., "Motivating Annotation for Personal Digital Photo Libraries: Lowering Barriers while Raising Incentives," Tech. Report HCIL-2004-18, U. Maryland, 2005 (10 pages).  
(Continued)

*Primary Examiner* — Loc Tran  
(74) *Attorney, Agent, or Firm* — Nixon Peabody LLP

(57) **ABSTRACT**

A computer-implemented method of associating digital tags with digital files comprises storing a plurality of digital files having embedded therein content data and metadata including tags; receiving, via a user interface device of a client device, a first tag label containing alphanumeric text created and inputted by a user of the client device; modifying, using a controller device, a selected first one of the tags of the metadata in a first of the digital files to include the first tag label; receiving, via the user interface device or another user interface device, an instruction to search for all of the digital files having at least the first tag label; responsive to receiving the instruction, automatically searching for all of the digital files having at least the first tag label; and displaying, on a video display device associated with the client device, a first indication of the first tag label.

**19 Claims, 50 Drawing Sheets**



## US 10,621,228 B2

Page 2

**Related U.S. Application Data**

No. 15/375,927, filed on Dec. 12, 2016, now Pat. No. 10,423,658, which is a continuation of application No. 14/193,426, filed on Feb. 28, 2014, now Pat. No. 9,552,376, which is a continuation-in-part of application No. 13/157,214, filed on Jun. 9, 2011, now Pat. No. 9,098,531.

(51) **Int. Cl.***G06F 16/51* (2019.01)*G06F 16/907* (2019.01)*G06F 3/0481* (2013.01)

## (56)

**References Cited**

## U.S. PATENT DOCUMENTS

7,372,976	B2	5/2008	Rhoad	8,583,620	B2	11/2013	Govindachetty
7,475,060	B2	1/2009	Toyama	8,583,668	B2	11/2013	Higgins
7,480,669	B2	1/2009	Lo	8,589,389	B2	11/2013	Bisdikian
7,694,236	B2	4/2010	Gusmorino	8,589,486	B2	11/2013	Martinez
7,822,746	B2	10/2010	Svendsen	8,594,702	B2	11/2013	Naaman
7,860,846	B2	12/2010	Takahashi	8,606,021	B2	12/2013	Conwell
7,991,283	B2	8/2011	Chen	8,626,699	B2	1/2014	Xie
8,001,124	B2	8/2011	Svendsen	8,671,154	B2	3/2014	Davis
8,015,144	B2	9/2011	Zheng	8,676,001	B2	3/2014	Brucher
8,024,317	B2	9/2011	Nair	8,706,406	B2	4/2014	Kalaboukis
8,032,508	B2	10/2011	Martinez	8,745,133	B2	6/2014	Martinez
8,055,675	B2	11/2011	Higgins	8,762,285	B2	6/2014	Davis
8,060,492	B2	11/2011	Nair	D708,196	S	7/2014	Pasceri
8,069,142	B2	11/2011	Davis	D708,197	S	7/2014	Pasceri
8,086,048	B2	12/2011	Naaman	D708,198	S	7/2014	Pasceri
8,108,778	B2	1/2012	Athsani	8,769,099	B2	7/2014	Kalaboukis
8,150,844	B2	4/2012	Redstone	8,769,393	B1	7/2014	Abhyanker
8,150,967	B2	4/2012	King	8,799,371	B2	8/2014	Davis
8,166,016	B2	4/2012	Higgins	8,805,165	B2	8/2014	Luo
8,166,168	B2	4/2012	Hayashi	8,806,365	B2	8/2014	Stapleton
8,171,388	B2	5/2012	Zaltzman	8,810,597	B2	8/2014	Akiya
8,230,338	B2	7/2012	Dugan	8,813,107	B2	8/2014	Higgins
8,255,379	B2	8/2012	Govindachetty	8,825,472	B2	9/2014	Raghuveer
8,264,570	B2	9/2012	Karimoto	8,831,352	B2	9/2014	Gao
8,271,506	B2	9/2012	Martinez	8,849,854	B2	9/2014	Kakarla
8,281,027	B2	10/2012	Martinez	8,849,909	B2	9/2014	Farmer
8,285,483	B2	10/2012	Amer-Yahia	D715,819	S	10/2014	Pasceri
8,307,029	B2	11/2012	Davis	8,880,568	B2	11/2014	Perczynski
8,315,959	B2	11/2012	Zheng	8,890,888	B2	11/2014	Lee
8,359,314	B2	1/2013	Svendsen	8,892,495	B2	11/2014	Hoffberg
8,364,611	B2	1/2013	Tendjoukian	8,914,342	B2	12/2014	Kalaboukis
8,380,039	B2	2/2013	Luo	8,923,889	B2	12/2014	Svendsen
8,386,506	B2	2/2013	Martinez	8,930,848	B2	1/2015	Lim
8,390,702	B2	3/2013	Bhatt	8,949,212	B1	2/2015	Dhandapani
8,401,771	B2	3/2013	Krumm	8,954,425	B2	2/2015	Xiao
8,402,356	B2	3/2013	Martinez	8,966,121	B2	2/2015	Josefsberg
8,429,156	B2	4/2013	Buchmueller	8,972,177	B2	3/2015	Zheng
8,447,120	B2	5/2013	Ji	8,998,422	B1	4/2015	Snaveley
8,452,855	B2	5/2013	Higgins	9,009,177	B2	4/2015	Zheng
8,458,115	B2	6/2013	Cai	9,014,511	B2	4/2015	Brucher
8,463,931	B2	6/2013	Evans	9,015,617	B2	4/2015	Stapleton
8,484,223	B2	7/2013	Ota	9,015,633	B2	4/2015	Takamura
8,489,115	B2	7/2013	Rodriguez	9,020,247	B2	4/2015	Adam
8,490,011	B2	7/2013	Stapleton	9,031,953	B2	5/2015	Rathnavelu
8,493,495	B2	7/2013	D'Souza	9,032,320	B2	5/2015	Crawford
8,503,791	B2	8/2013	Conwell	9,055,037	B2	6/2015	Evans
8,504,073	B2	8/2013	Svendsen	9,063,226	B2	6/2015	Zheng
8,520,979	B2	8/2013	Conwell	9,076,259	B2	7/2015	Hourie
D689,079	S	9/2013	Edwards	9,092,409	B2	7/2015	Charaniya
D689,080	S	9/2013	Edwards	9,098,545	B2	8/2015	Abhyanker
D689,083	S	9/2013	Pasceri	9,104,729	B2	8/2015	Dong
D689,084	S	9/2013	Pasceri	9,104,915	B2	8/2015	Conwell
D689,085	S	9/2013	Pasceri	9,110,903	B2	8/2015	Martinez
8,538,811	B2	9/2013	Higgins	9,151,618	B2	10/2015	Amer-Yahia
8,538,813	B2	9/2013	Kakarla	9,158,794	B2	10/2015	Higgins
8,542,294	B2	9/2013	Bhatt	9,160,802	B2	10/2015	Svendsen
8,554,623	B2	10/2013	Higgins	9,172,666	B2	10/2015	Murdock
8,560,390	B2	10/2013	Higgins	9,202,200	B2	12/2015	Stibel
8,560,517	B2	10/2013	Yang	9,218,328	B2	12/2015	Stapleton
				9,224,172	B2	12/2015	Churchill
				9,235,766	B2	1/2016	Li
				9,239,848	B2	1/2016	Liu
				9,245,041	B2	1/2016	Pilskalns
				9,261,376	B2	2/2016	Zheng
				D751,597	S	3/2016	Pasceri
				9,311,396	B2	4/2016	Meadow
				9,336,240	B2	5/2016	Bhatt
				9,372,931	B2	6/2016	Capt
				9,390,104	B2	7/2016	Thomee
				9,405,981	B2	8/2016	Li
				9,418,485	B2	8/2016	Lindberg
				9,424,595	B2	8/2016	Svendsen
				9,460,116	B2	10/2016	Pilskalns
				9,462,054	B2	10/2016	Poletto
				9,465,513	B2	10/2016	Sims
				9,471,834	B1	10/2016	Filip
				9,483,500	B2	11/2016	Brucher
				9,501,577	B2	11/2016	Zheng
				9,507,778	B2	11/2016	Jaffe

## Page 3

2009/0288005	A1	11/2009	Stapleton
2009/0290812	A1	11/2009	Naaman
2009/0307618	A1	12/2009	Lawler
2009/0325602	A1	12/2009	Higgins
2010/0041419	A1	2/2010	Svendsen
2010/0046842	A1	2/2010	Conwell
2010/0053371	A1	3/2010	Karimoto
2010/0064239	A1	3/2010	Crawford
2010/0082427	A1	4/2010	Burgener
2010/0107125	A1	4/2010	Ockene
2010/0153348	A1	6/2010	Perczynski
2010/0162411	A1	6/2010	Chang
2010/0171763	A1	7/2010	Bhatt
2010/0182341	A1	7/2010	Lee
2010/0185509	A1	7/2010	Higgins
2010/0241689	A1	9/2010	Davis
2010/0241944	A1	9/2010	Athasani
2010/0268717	A1	10/2010	Pilskalns
2010/0268766	A1	10/2010	Bouget
2010/0280913	A1	11/2010	O'Sullivan
2010/0293035	A1	11/2010	Athasani
2010/0293193	A1	11/2010	Harrison
2011/0040779	A1	2/2011	Svendsen
2011/0093458	A1	4/2011	Zheng
2011/0109769	A1	5/2011	Bhatt
2011/0113064	A1	5/2011	Govindachetty
2011/0145258	A1	6/2011	Kankainen
2011/0191014	A1	8/2011	Feng
2011/0191253	A1	8/2011	Pilskalns
2011/0202267	A1	8/2011	Amer-Yahia
2011/028426	A1	8/2011	Zheng
2011/0289031	A1	11/2011	Zheng
2011/0301832	A1	12/2011	Zheng
2011/0314016	A1	12/2011	Svendsen
2012/0114249	A1	5/2012	Conwell
2012/0158755	A1	6/2012	Gammill
2012/0218150	A1	8/2012	Oyabu
2012/0220311	A1	8/2012	Rodriguez
2012/0251011	A1	10/2012	Gao
2012/0266090	A1	10/2012	Nealer
2012/0278171	A1	11/2012	Tang
2012/0278767	A1	11/2012	Stibel
2012/0329441	A1	12/2012	Tseng
2012/0331091	A1	12/2012	Tseng
2013/0018881	A1	1/2013	Bhatt
2013/0036165	A1	2/2013	Tseng
2013/0063613	A1	3/2013	Conwell
2013/0073202	A1	3/2013	Zheng
2013/0101157	A1	4/2013	Li
2013/0138685	A1	5/2013	Brucher
2013/0141612	A1	6/2013	Bhatt
2013/0151597	A1	6/2013	Akiya
2013/0202198	A1	8/2013	Adam
2013/0275536	A1	10/2013	Murdock
2013/0339440	A1	12/2013	Balassanian
2014/0059477	A1	2/2014	Wong
2014/0071272	A1	3/2014	Rodriguez
2014/0089811	A1	3/2014	Meadow
2014/0101531	A1	4/2014	Capt
2014/0101601	A1	4/2014	Tang
2014/0143247	A1	5/2014	Rathnavelu
2014/0149036	A1	5/2014	Amer-Yahia
2014/0181089	A1	6/2014	Desmond
2014/0188880	A1	7/2014	Abhyanker
2014/0193087	A1	7/2014	Conwell
2014/0354628	A1	12/2014	Lindberg
2015/0039630	A1	2/2015	Thomee
2015/0070165	A1	3/2015	East
2015/0070397	A1	3/2015	Miller
2015/0116540	A1	4/2015	Gilman
2015/0117713	A1	4/2015	Zheng
2015/0156247	A1	6/2015	Hensel
2015/0186389	A1	7/2015	Zheng
2015/0213057	A1	7/2015	Brucher
2015/0213329	A1	7/2015	Adam
2015/0244794	A1	8/2015	Poletto
2015/0244833	A1	8/2015	Grue
2015/0358224	A1	12/2015	Poletto
2016/0092741	A1	3/2016	Li

## US 10,621,228 B2

Page 4

(56)

## References Cited

## U.S. PATENT DOCUMENTS

2016/0162512	A1	6/2016	Battistini
2016/0247307	A1	8/2016	Stoop
2016/0253358	A1	9/2016	Bhatt
2016/0314187	A1	10/2016	Poletto
2016/0321269	A1	11/2016	Thomee
2016/0328444	A1	11/2016	Shinn
2016/0344888	A1	11/2016	Lahcanski
2017/0024415	A1	1/2017	Brucher
2017/0103081	A1	4/2017	Jones

## FOREIGN PATENT DOCUMENTS

EP	2410414	B1	10/2019
WO	WO 2011/070225	A1	6/2011
WO	WO 2013/019376	A1	2/2013
WO	WO 2013/099704	A1	7/2013

## OTHER PUBLICATIONS

Miller et al., "Give and take: a study of consumer photo-sharing culture and practice," CHI '07 Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, pp. 347-356, 2007 (10 pages).

Ames et al., "Why we tag: motivations for annotation in mobile and online media," CHI '07 Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, pp. 971-980, ACM, 2007 (10 pages) 10083533.

Yee et al., "Faceted Metadata for Image Search and Browsing", CHI 2003, pp. 401-408, 2003, ACM.

Ferre, "CAMELIS: Organizing and Browsing a Personal Photo Collection with a Logical Information System", Int. Conf. Concept Lattices and Their Applications, pp. 112-123, 2007, HAL.

Tomasson et al., "PhotoCube: Effective and Efficient Multi-Dimensional Browsing of Personal Photo Collections", ICMR '11, 2011, ACM.

Bartolini et al., "Integrating Semantic and Visual Facets for Browsing Digital Photo Collections", SBED, pp. 65-72, 2009.

Trattner et al., "Evaluating Tag-Based Information Access in Image Collections", Proceedings of the 23<sup>rd</sup> ACM Conference on Hypertext and Social Media, pp. 113-122, 2012 ACM.

Kang et al., "Capture, Annotate, Browse, Find, Share: Novel Interfaces for Personal Photo Management", International Journal of Human-Computer Interaction, 23(3), pp. 315-337, 2007, Lawrence Erlbaum Associates, Inc.

Jaffe et al., "Generating Summaries and Visualization for Large Collections of GeoReferenced Photographs", MIR'06, pp. 89-98, 2006 ACM.

Torniai et al., "Sharing, Discovering and Browsing Geotagged Pictures on the Web", 2007, Hewlett-Packard Development Company, L.P., pp. 1-18 (19 pages).

Snively et al., "Photo Tourism: Exploring Photo Collection in 3D", SIGGRAPH '06 ACM Transactions on Graphics, vol. 25, Issue 3, pp. 835-846, 2006 ACM.

Kisilevich et al., "Event-based analysis of People's Activities and Behavior Using Flickr and Panoramic Geotagged Photo Collections", 14<sup>th</sup> International Conference Information Visualization, pp. 289-296, 2010 IEEE.

Ahern et al., "World Explorer: Visualizing Aggregate Data From Unstructured Text in Geo-Referenced Collections", JCDL'07, pp. 1-10, 2007, ACM.

Kopf et al., "Deep photo: model-based photograph enhancement and viewing", ACM Transactions on Graphics, vol. 27, No. 5, Article 116, Dec. 2008, ACM (10 pages).

Amundsen, J., "Using the Geographical Location of Photos in Mobile Phones"; Master of Science in Computer Science submission; Norwegian University of Science and Technology; Jul. 2008 (112 pages).

Gentile, L., "Using Flickr Geotags to Find Similar Tourism Destinations"; master thesis, 2011; Politecnico di Milano, Dept. of Computer Engineering (96 pages).

Hollenstein, L., "Capturing Vernacular Geography from Georeferenced Tags"; Master Thesis; Institute of Geography, University of Zurich; Nov. 2008 (139 pages).

Nutanong, S. et al., "An Efficient Layout Method for a Large Collection of Geographic Data Entries"; Center for Automation Research, Institute for Advanced Computer Studies, Dept. of Computer Science, University of Maryland; pp. 717-720 (4 pages).

Slingsby, A. et al., "Interactive tag maps and tag clouds for the multiscale exploration of large spatio-temporal datasets"; Information Visualization, pp. 497-504; 2007, IV '07. 11<sup>th</sup> International Conference. ISSN: 1550-6037 (9 pages).

Hoffman, A., "Create Great iPhone Photos: Apps, Tips, Tricks, and Effects"; copyright 2011; ISBN-10: 1-59327-285-5, ISBN-13: 978-1-59327-285-2 (216 pages).

Chen, Y-F. et al., "GeoTracker: Geospatial and Temporal RSS Navigation"; AT&T Labs—Research, Florham Park, NJ; WWW 2007 / Track: Browsers and User Interfaces, Session: Smarter Browsing, pp. 41-50 (10 pages).

Goodman, E., "Destination Services: Tourist media and networked places"; School of Information, UC Berkeley; Mar. 2, 2007 (11 pages).

Rattenbury, T. et al., "Towards Automatic Extraction of Event and Place Semantics from Flickr Tags"; SIGIR '07, Jul. 23-27, 2007; Amsterdam, The Netherlands; ACM 978-1-59593-597-7/07/0007 (8 pages).

Kadar, B. et al., "Where Do Tourists Go? Visualizing and Analysing the Spatial Distribution of Geotagged Photography"; Cartographica 48:2, pp. 78-88; 2013; University of Toronto Press; doi: 10.3138/carto.48.2.1839 (11 pages).

Kennedy, L. et al., "How Flickr Helps Us Make Sense of the World: Context and Content in Community-Contributed Media Collections"; MM '07, Sep. 23-28, 2007; Augsburg, Bavaria, Germany; Copyright 2007; ACM 978-1-59593-701-8/07/0009 (10 pages).

Richard, G. et al., "Geotagging Photographs for Distribution on the Web"; Mineral Physics Institute, Earth and Space Sciences Building, Stony Brook University, Stony Brook, NY; date unknown (9 pages).

\* cited by examiner

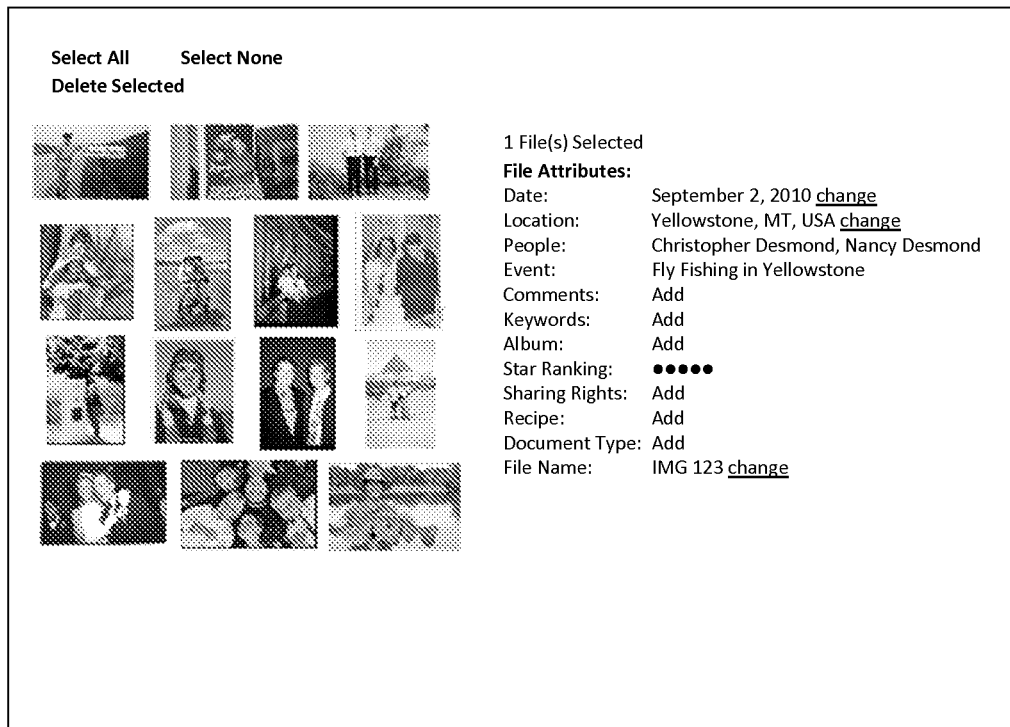
U.S. Patent

Apr. 14, 2020

Sheet 1 of 50

US 10,621,228 B2

**FIG. 1**



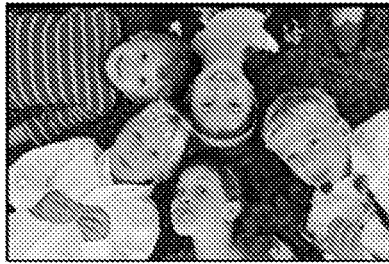
**U.S. Patent**

**Apr. 14, 2020**

**Sheet 2 of 50**

**US 10,621,228 B2**

**FIG. 2**



**Comments:**

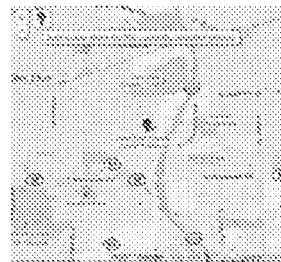
Suzanne and Anthony's Wedding Party where the cousins posed for a photo in the grass. Note, Jack with the lollipop and the photographer with his shoe in the photo

**People:**

Jack Wong  
CJ Wong  
Mary Firestone  
Zoe Peika  
Nick Persons

Event: Suzanne & Anthony's Wedding Reception 2010

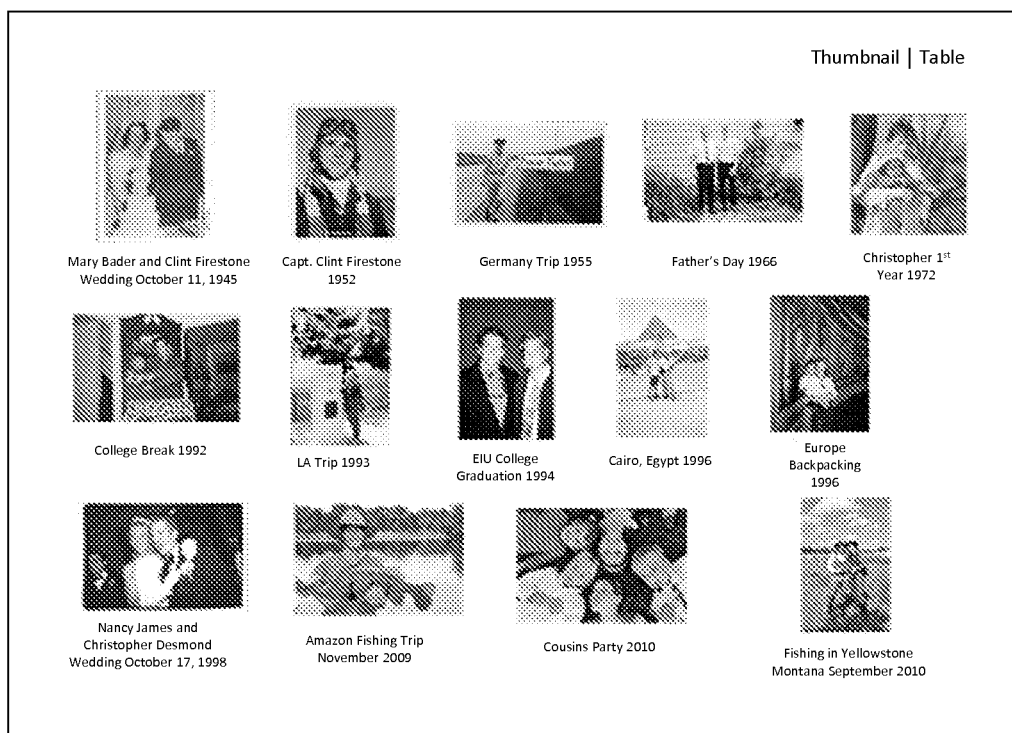
Camera Details: more



**Location:**

Historical Society  
Lisle, IL 60532

**FIG. 3**





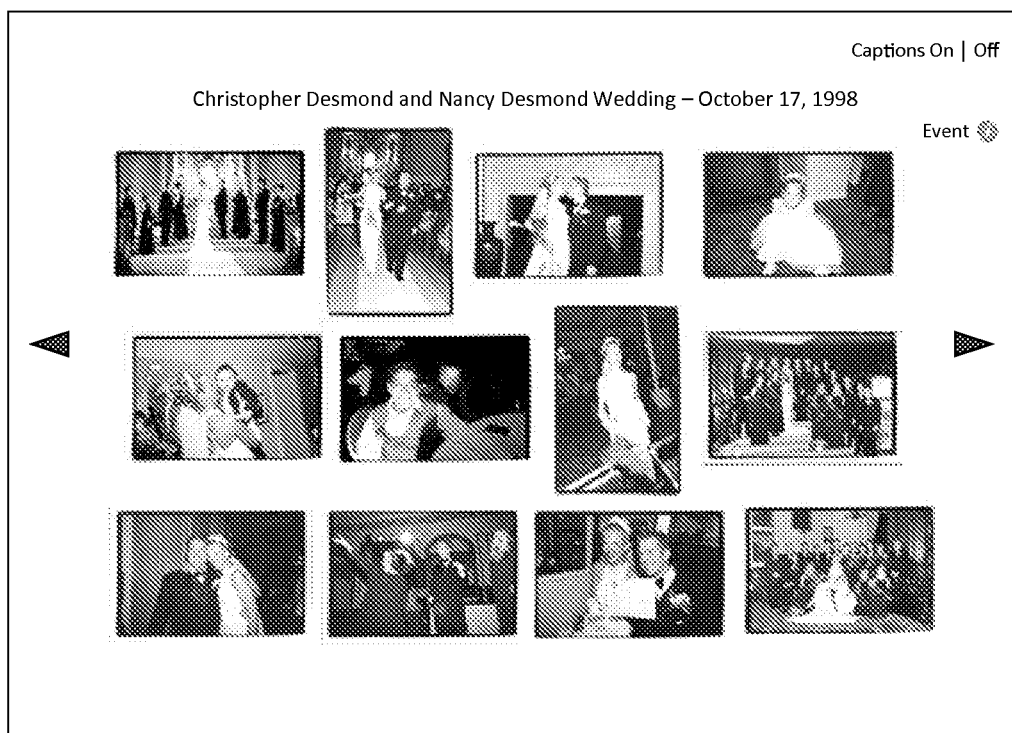
U.S. Patent

Apr. 14, 2020

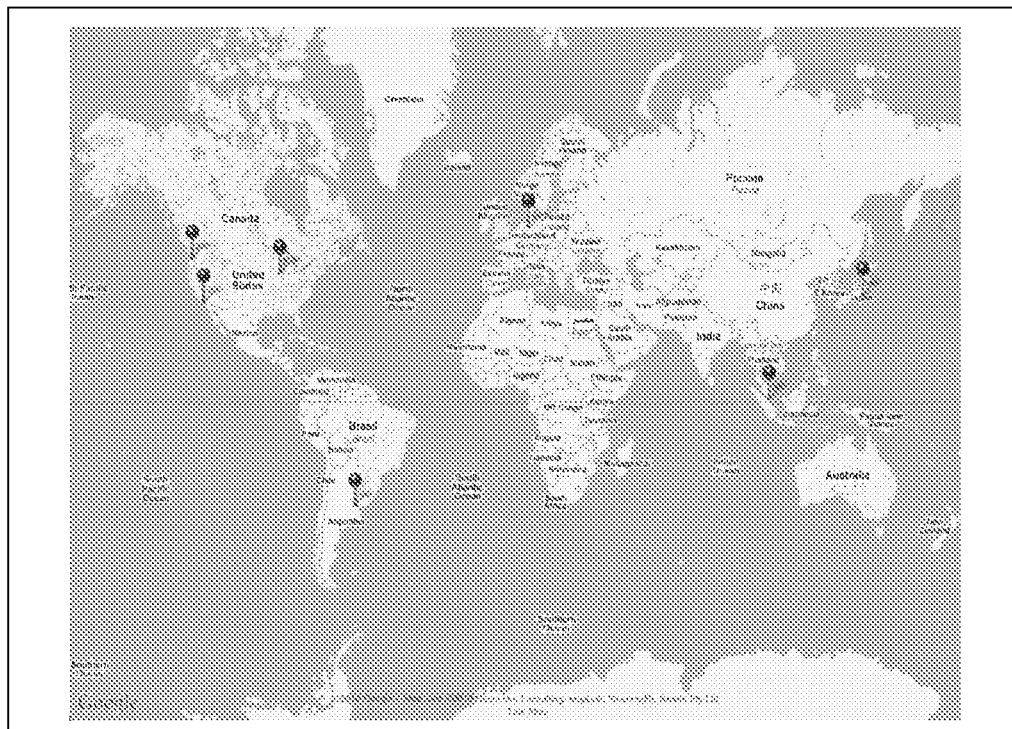
Sheet 4 of 50

US 10,621,228 B2

**FIG. 4**



**FIG. 5**



U.S. Patent

Apr. 14, 2020


Sheet 6 of 50

US 10,621,228 B2

**FIG. 6**



**FIG. 7**



**Clinton Dewitt Firestone IV**

Birth: July 12, 1896  
Death: April 29, 1971  
Parents: Clinton Dewitt Firestone III and Viola Miller  
Comments: He was a WWII U.S. Air force pilot and POW in WWII and veteran honorably discharged in December of 1947. He worked for 44 years for the Firestone Tire and Rubber Company in retail, wholesale and original equipment sales, marketing and management. He was born in Akron, OH and is buried in Columbiana, OH.

[Edit bio](#)

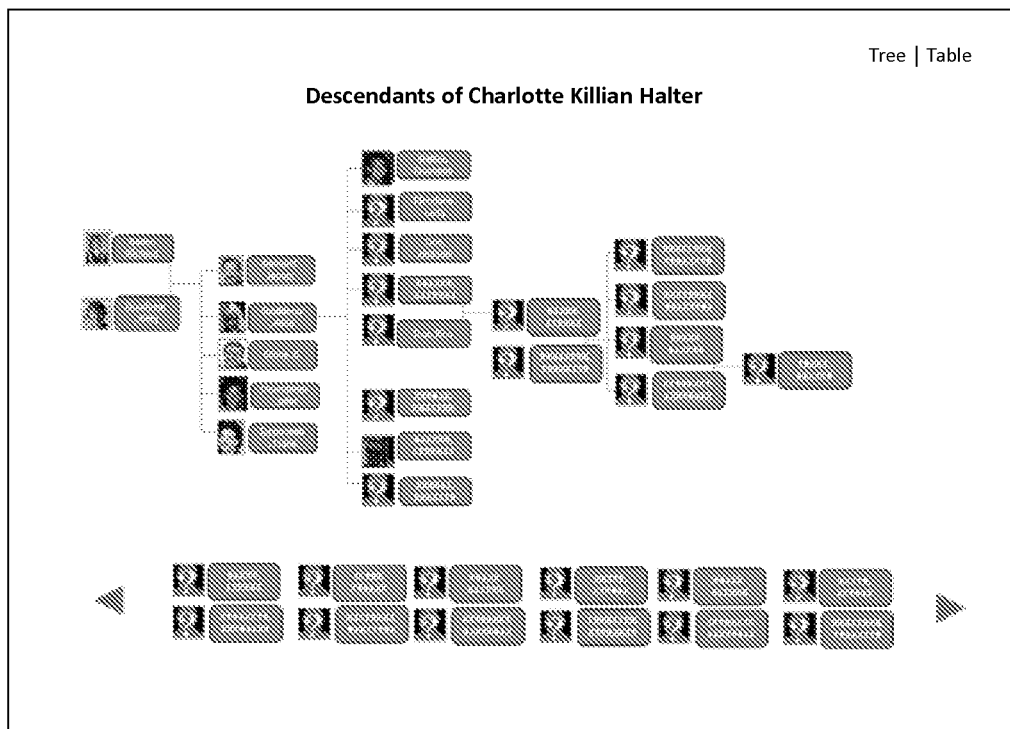
Locations

Timeline

Family Tree

Recipes

**FIG. 8**



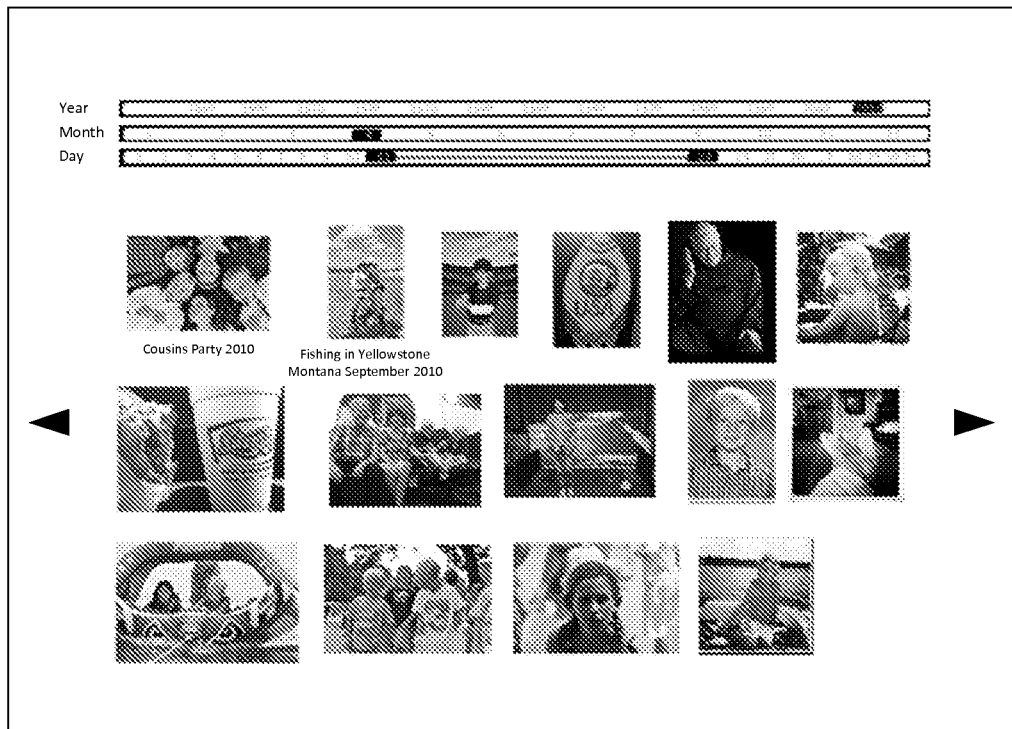
**U.S. Patent**

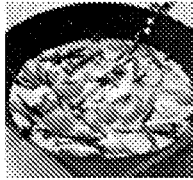
**Apr. 14, 2020**

**Sheet 9 of 50**

**US 10,621,228 B2**

**FIG. 9**



**FIG. 10****Desmond's Yellow Thai Chicken Curry****Curry Mix**

- Coconut milk (400 ml) – DO NOT SHAKE IT UP
- 800 gram of chicken (4 chicken breast)
- Fish sauce (Nam Pla) Thai Bamboo Garden – Bottle
- Garlic (2 cloves)
- Broccoli ( 2cups chopped)
- 2 Peppers (chopped)
- 2 Carrots (chopped)

- 1 Zucchini (chopped)
- Thai Basil (8 leaves)
- Lemon Grass (in jar) 1 teaspoon
- Chinese Ginger Root (in jar) 1 teaspoon

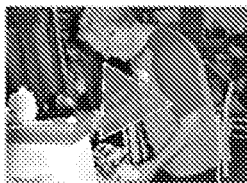
**Rice**

- Thai Rice (something that only takes 2 cups of water)
- Dice chicken in bowl and add two tablespoons of fish sauce. Let marinate for 20 minutes.
- Take thick part of coconut milk out into pan (about 4 tablespoons), Curry paste, 1 spoon of lemon grass, 1 spoon of ginger and garlic. Heat over high with boil and THEN stir for 1 minute. Add meat (uncooked) and fry until cooked over high heat
- Add milk, brown sugar and salt. Bring back to slight boil and constantly stir. Add veggies and soy sauce. Cook for about 10-14 minutes COVERED until veggies are cooked. Serve with a smile.

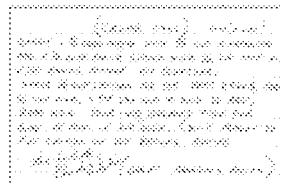
Chef: Barry Desmond



Video on How to Make It



Original Handwritten Recipe



**U.S. Patent****Apr. 14, 2020****Sheet 11 of 50****US 10,621,228 B2****FIG. 11**

Thumbnail | Table

Album/Event	Date	Location	# Photos	# Videos	# Docs
Jack Monk's Arrival	26-Dec-2003	Chicago, IL	69	4	4
Mike Testy's First Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Jack Monk's Arrival	29-Dec-2003	Chicago, IL	69	4	4
Mike Testy's 2nd Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Jack Monk's Arrival	29-Dec-2003	Chicago, IL	69	4	4
Mike Testy's 3rd Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Jack Wrigley Monk's Arrival	29-Dec-2003	Chicago, IL	69	4	4
Mike Testy's 4th Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Nancy Learns How to Ride a Bike	21-Jul-1978	St. Louis, MO	76	2	0





**FIG. 12**

Thumbnail | Table

Album/Event	Date	Location	# Photos	# Videos	# Docs
Jack Monk's Arrival	26-Dec-2003	Chicago, IL	69	4	4
Mike Testy's First Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Jack Monk's Arrival	29-Dec-2003	Chicago, IL	69	4	4
Mike Testy's 2nd Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Jack Monk's Arrival	29-Dec-2003	Chicago, IL	69	4	4
Mike Testy's 3rd Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Jack Wrigley Monk's Arrival	29-Dec-2003	Chicago, IL	69	4	4
Mike Testy's 4th Birthday	13-Sep-1983	Minneapolis, MN	54	21	0
Cubs Beat Cards 1998	5-Aug-1998	Chicago, IL	36	2,199	2
Nancy Learns How to Ride a Bike	21-Jul-1978	St. Louis, MO	76	2	0



**U.S. Patent****Apr. 14, 2020****Sheet 13 of 50****US 10,621,228 B2****FIG. 13**

Thumbnail | Table

Last Name	# People	# Photos	# Videos	# Docs
+ Alberts	2	8	0	0
+ Annex	2	7	0	0
+ Bade	3	8	0	0
+ Bacon	4	8	0	0
+ Bates	5	7	1	0
+ Boone	6	6	2	2
+ Danas	7	5	4	1
+ Danes	8	7	3	2
- Monk (All)	2	499	4	14
 Monk, CJ	1	200	2	7
 Monk, Jack	1	199	2	7
+ Firestone	21	1249	17	39
+ Moore	1	4	6	3
+ Slythe	1	9	0	9
+ Stein	2	249	1	3
+ Testy	4	788	2	12

**U.S. Patent****Apr. 14, 2020****Sheet 14 of 50****US 10,621,228 B2****FIG. 14**

Thumbnail | Table

Last Name	Relationship	# Photos	# Videos	# Docs
Alberts, John	Cousin	8	0	0
Killian, Jack	Son	7	0	0
Killian, Brian	Nephew	8	0	0
Killian, Kevin	Nephew	8	0	0
Killian, Sarah	Daughter-in-law	7	1	0
Killian, John	Great Nephew	6	2	2
Killian, Mark	Great Nephew	5	4	1
Killian, Louis	Great Grandson	7	3	2
Killian, John	Grandson	499	4	14
 Monk, CJ	Great Grandson	200	2	7
 Monk, Jack	Great Grandson	199	2	7
Firestone, Mike	Third Cousin	1249	17	39
Moore, Bertha	Great Niece	4	6	3
Slythe, Sarah	Sister	9	0	9
Killian, John	Brother	249	1	3
Killian, Mike	Brother	788	2	12

**U.S. Patent****Apr. 14, 2020****Sheet 15 of 50****US 10,621,228 B2****FIG. 15**

Thumbnail | Table

Location Name	Address	City	State	Country	# Photos	# Videos	# Docs
Dom		Cologne		Germany	3	2	0
Lucilla & Roberto		Montalcino		Italy	6	1	0
Lisle Home	898 West St	Lisle	IL	USA	45	12	2
College	545 Market	Akron	OH	USA	64	2	0
Amazon Trip		Manus		Brazil	235	8	2
Cabin	999 Pine	Lake Geneva	WI	USA	98	2	0
Grad School	903 Plymouth	Charleston	IL	USA	1256	32	4
Griffith Park	298 Glencarin	Los Feliz	CA	USA	12	0	0
LA Equestrian Ctr	568 Horse Dr	Glendale	CA	USA	4	4	0
Del Coronado	12 Coronado Dr	Coronado	CA	USA	321	4	0
Fenway Park	123 Yawke	Boston	MA	USA	57	3	5
Wrigley Field	1190 W Addison	Chicago	IL	USA	498	7	3
Home	444 Main	Anywhere	IL	USA	10,987	49	9
GA Grill Party	321 Silver	Macon	GA	USA	15	0	0
Pike's Market	786 Market	Seattle	WA	USA	18	1	0
Raffels	345 Fong	Singapore		Singapore	23	2	0

**U.S. Patent****Apr. 14, 2020****Sheet 16 of 50****US 10,621,228 B2****FIG. 16**

Category | Card | Table

Recipe	Chef	Date	Category
Blacks Yellow Thai Chicken Curry	Jack Black	31 Jan 2010	Dinner
Skinny Germans	Gerda	29 Dec 2003	Breakfast
KFC in a Bag	The Kernal	13 Sept 1988	Anytime
Shit on a Shingle	George James	5 Aug 1998	Anytime
Mrs. Fields Cookies	Mrs. Fields	21 July 1978	Dessert
Chicken Pot Pie	Jack Black	31 Jan 2010	Dinner
Roll Your Own Dough	Vito Spadavecchio	29 Dec 2003	Dinner
Pizza ala Franciscan	Charles Faso	13 Sept 1988	Dinner
Meatball Delight	Ben Delight	5 Aug 1998	Dinner
Almond Cookies	Lori James	21 July 1978	Dessert
Jumpin Jack Flap Jacks	Jack Jack	31 Jan 2010	Breakfast
Vicki's Chow Mein	Vicki Firestone	29 Dec 2003	Dinner
Fat Steak	Barry Monk	13 Sept 1988	Dinner
Mud Pie	Nancy Monk	5 Aug 1998	Dessert
Caesar Salad	Christopher Monk	21 July 1978	Anytime
Daddio Pancakes	Barry Monk	2 March 2011	Breakfast

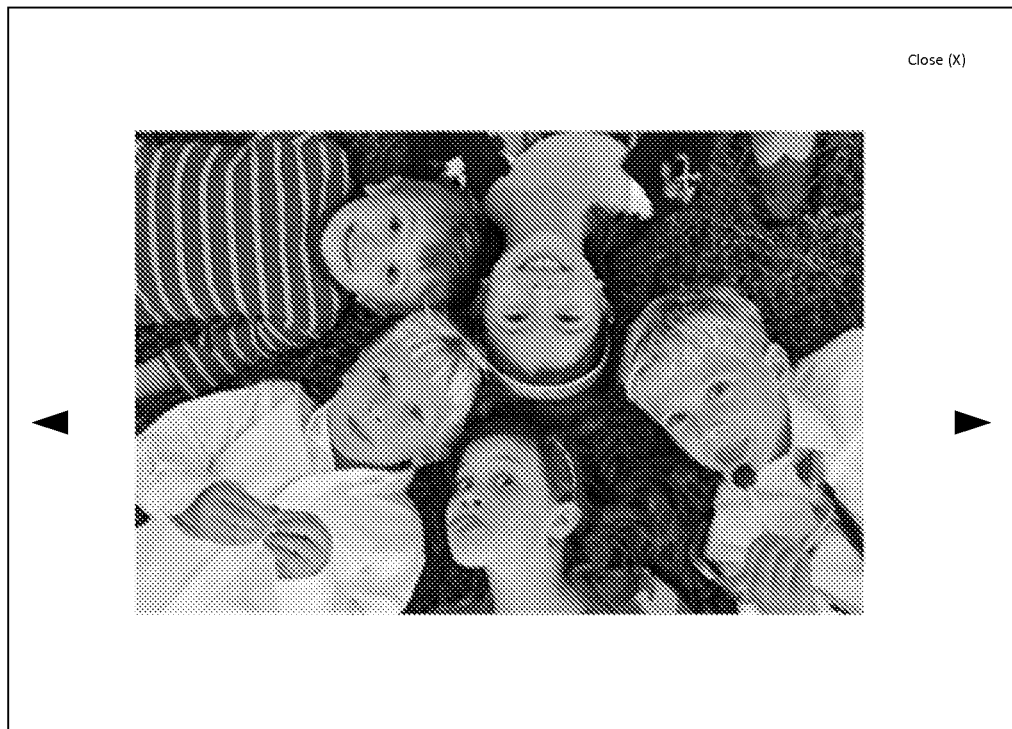
**U.S. Patent**

**Apr. 14, 2020**

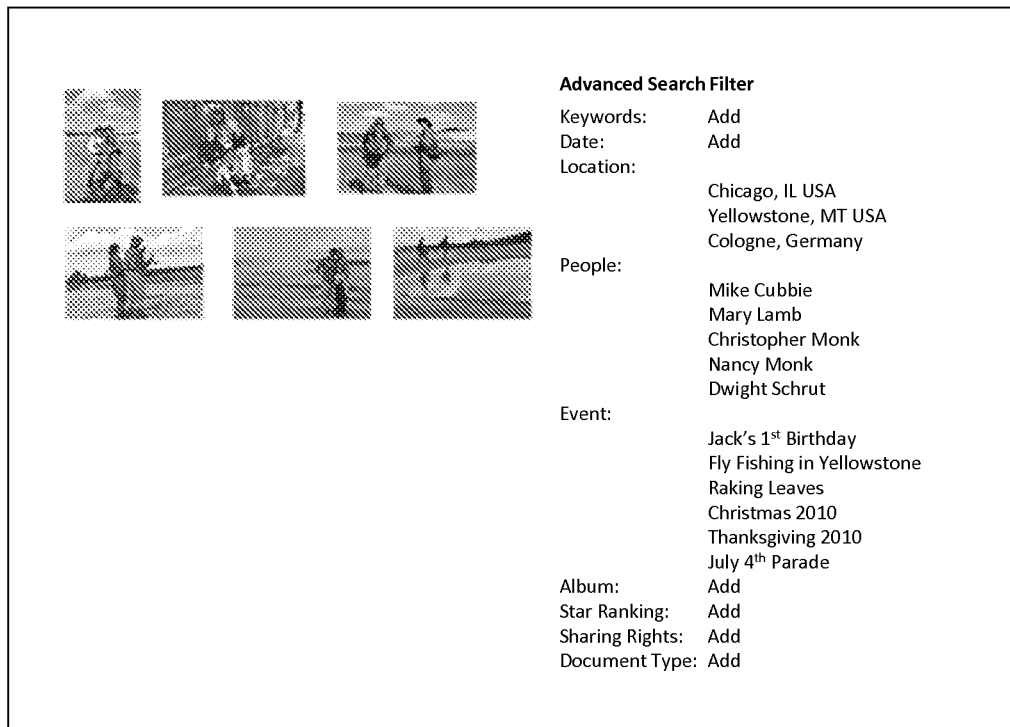
**Sheet 17 of 50**

**US 10,621,228 B2**

**FIG. 17**



**FIG. 18**



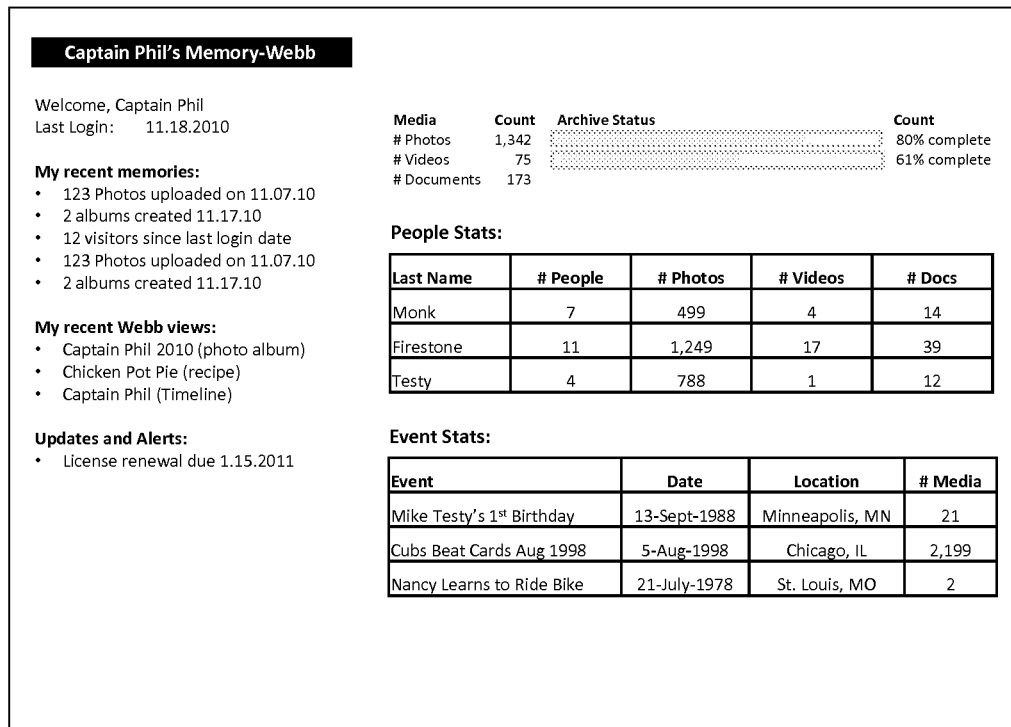
**FIG. 19**



FIG. 20

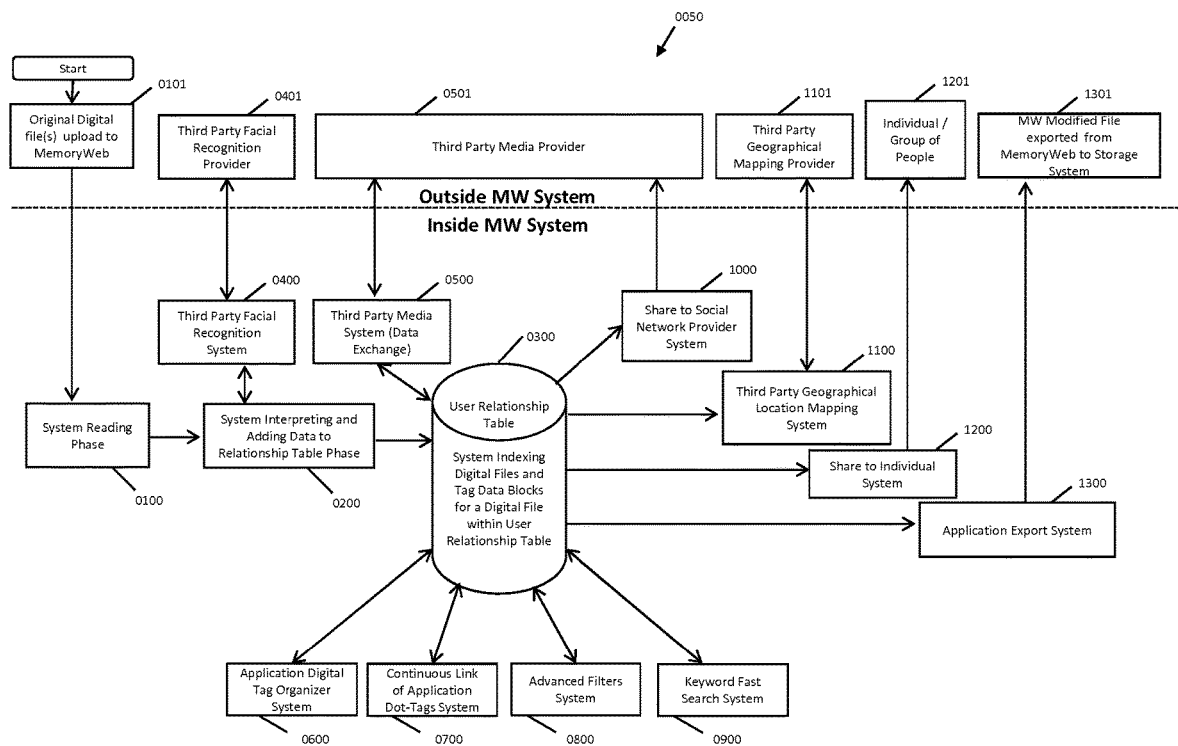
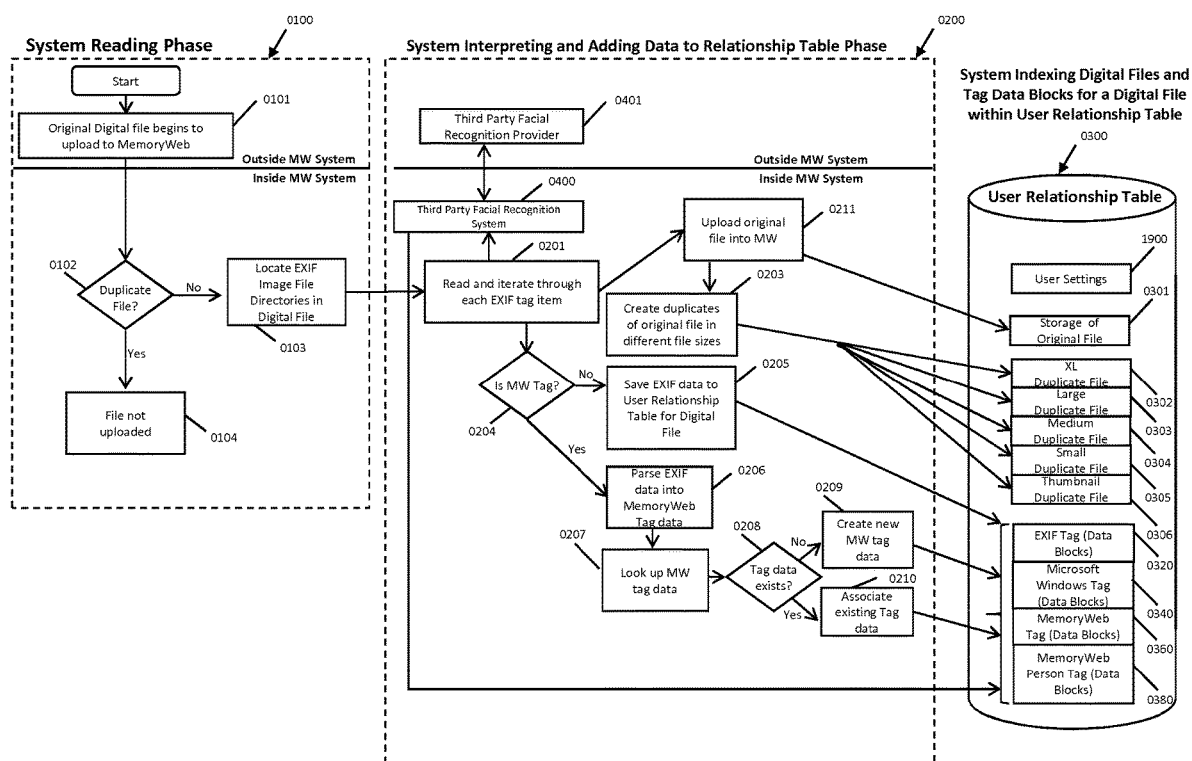


FIG. 21



U.S. Patent

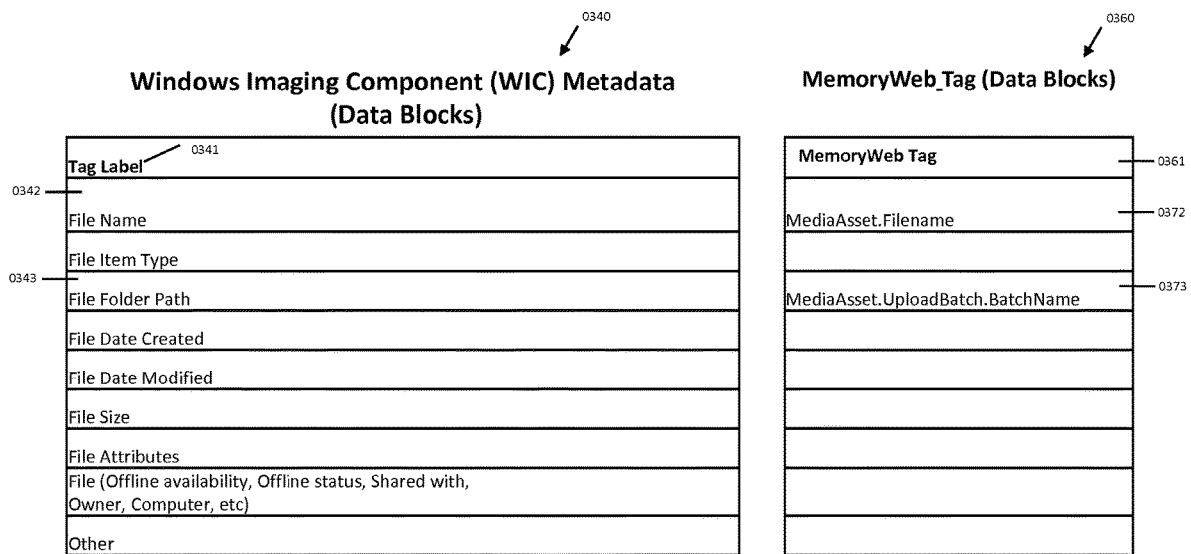
Apr. 14, 2020

Sheet 22 of 50

US 10,621,228 B2

FIG. 22

EXIF Tags version 2.3 Image File Directories (Data Blocks)			MemoryWeb_Tag (Data Blocks)	
Tag Labels	EXIF Family Group Name	Location	MemoryWeb_Tag	
Description Title	IFD0	0x9c9b or 0x010e	MediaAsset.Caption	
Description Subject	IFD0	0x9c9f		
Description Rating		N/A	MediaAsset.StarRanking	
Description Tags	IFD0	0x9c9e		
Description Comments	IFD0	0x9c9c		
Origin Authors	IFD0	0x9c9d		
Origin Date Taken	ExifIFD	0x9003	MediaAsset.DateCreated	
Origin Date Acquired		N/A		
Origin Copyright	IFD0	0x8298		
Image (Image ID, Dimensions, Width Height, etc)		Multiple		
Width		0xbc80	MediaAsset.Width	
Height		0xbc81	MediaAsset.Height	
Camera (Camera Maker, Camera Model, etc)		Multiple		
Advanced Photo (Lens Maker, Lens Model, etc)		Multiple		
User Comment	ExifIFD	0x9286	This is used to inject information that do not currently have EXIF standardized tags including Collection, People, Location Name, Recipe Name, Person Tag Data Blocks (0380), etc.	
GPS Latitude	GPS	0x0002	MediaAsset.Location.Latitude	
GPS Latitude Ref	GPS	0x0003	MediaAsset.Location.Latitude	
GPS Longitude	GPS	0x0004	MediaAsset.Location.Longitude	
GPS Longitude Ref	GPS	0x0005	MediaAsset.Location.Longitude	
GPS Altitude	GPS	0x0006		

**FIG. 23**

**FIG. 24**

0380  
↓

**MemoryWeb\_Person Tag (Data Blocks)**

Person Name	0395
Nickname	0381
Birthdate	0382
Date of Death	0383
Biography	0384
Mother	0385
Father	0386
Brother 1 , Brother 2, ...	0387
Sister 1 , Sister 2, ...	0388
Daughter 1 , Daughter 2, ...	0389
Son 1 , Son 2. ...	0390
Spouse 1 , Spouse 2, ...	0391
Facial Recognition Data (Taylor?)	0392
Facebook ID	0393
pets	0394
...	0396

FIG. 25

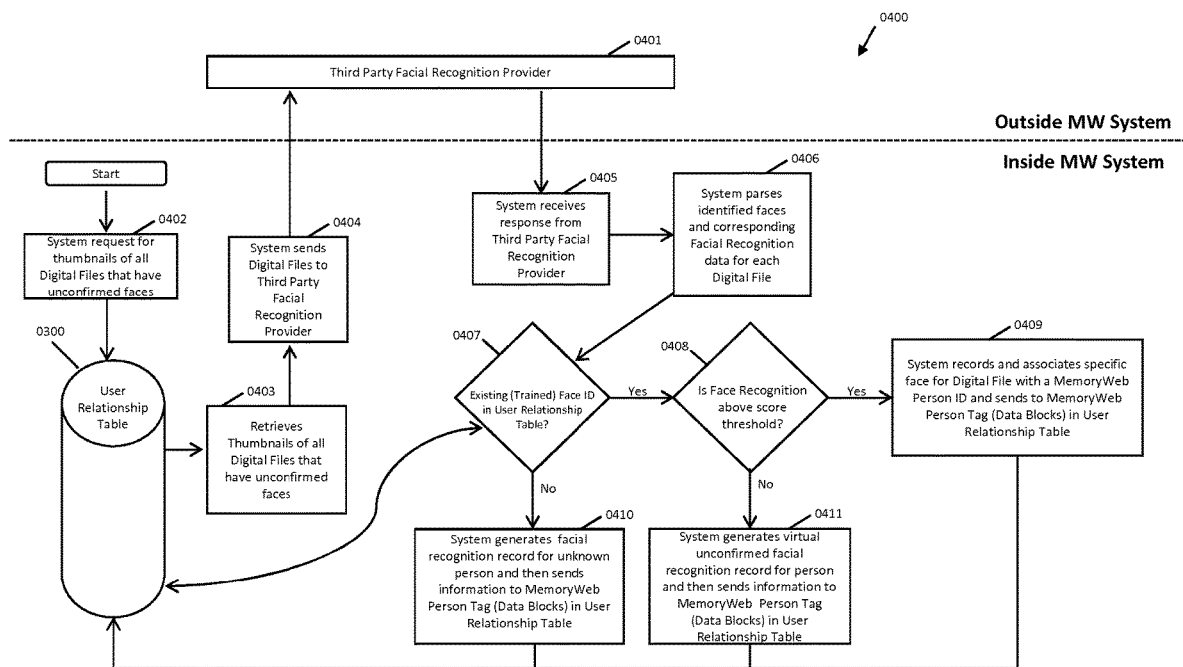
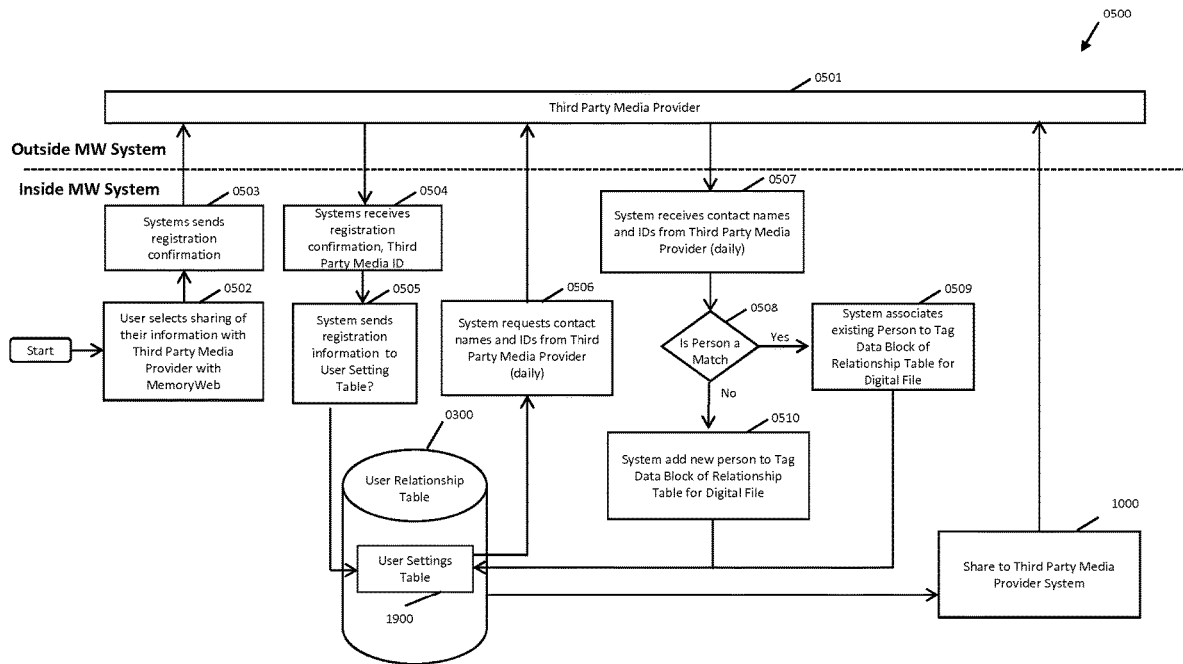



FIG. 26



**FIG. 27**

1900



Item	
1901	User's Name
1902	Payment ID
1903	Password
1904	Account Type
1905	User's email
1906	Language preference
1907	Date format
1908	Email notifications
1909	Contacts (with third Party Social Media)
1910	Facebook ID
1911	API Token
1912	Payment Date
1913	...



FIG. 28

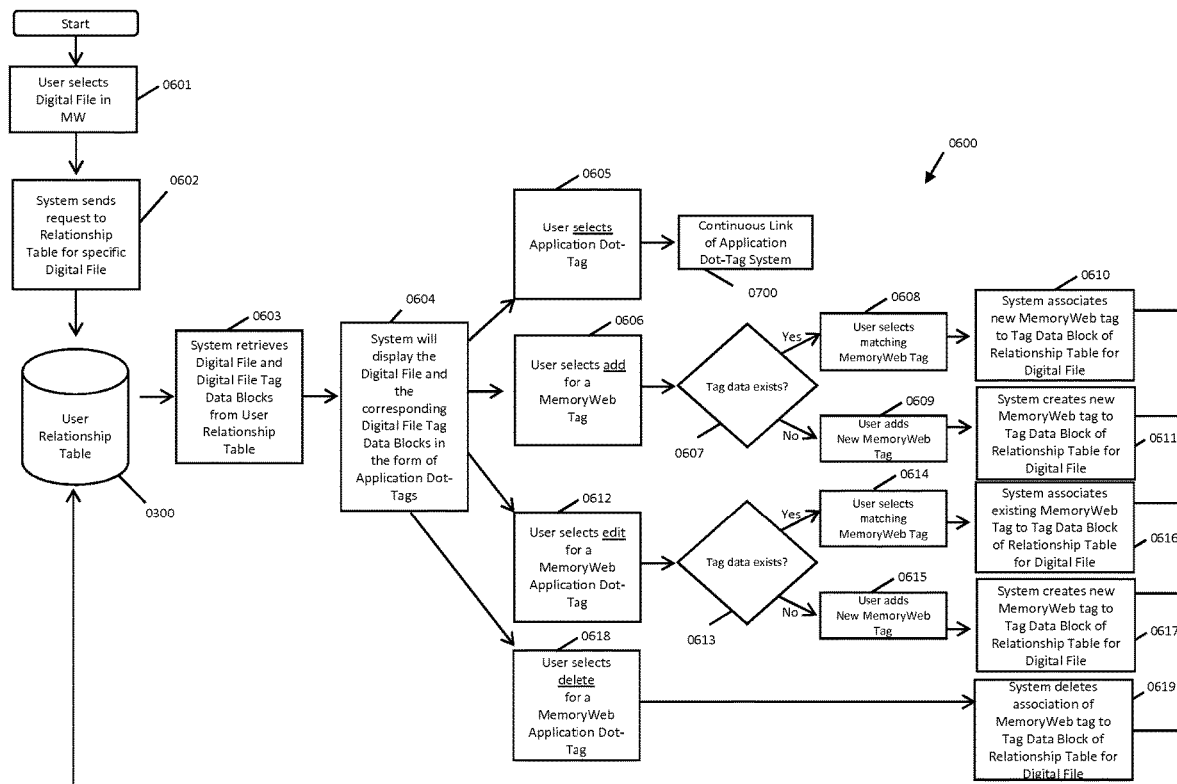


FIG. 29

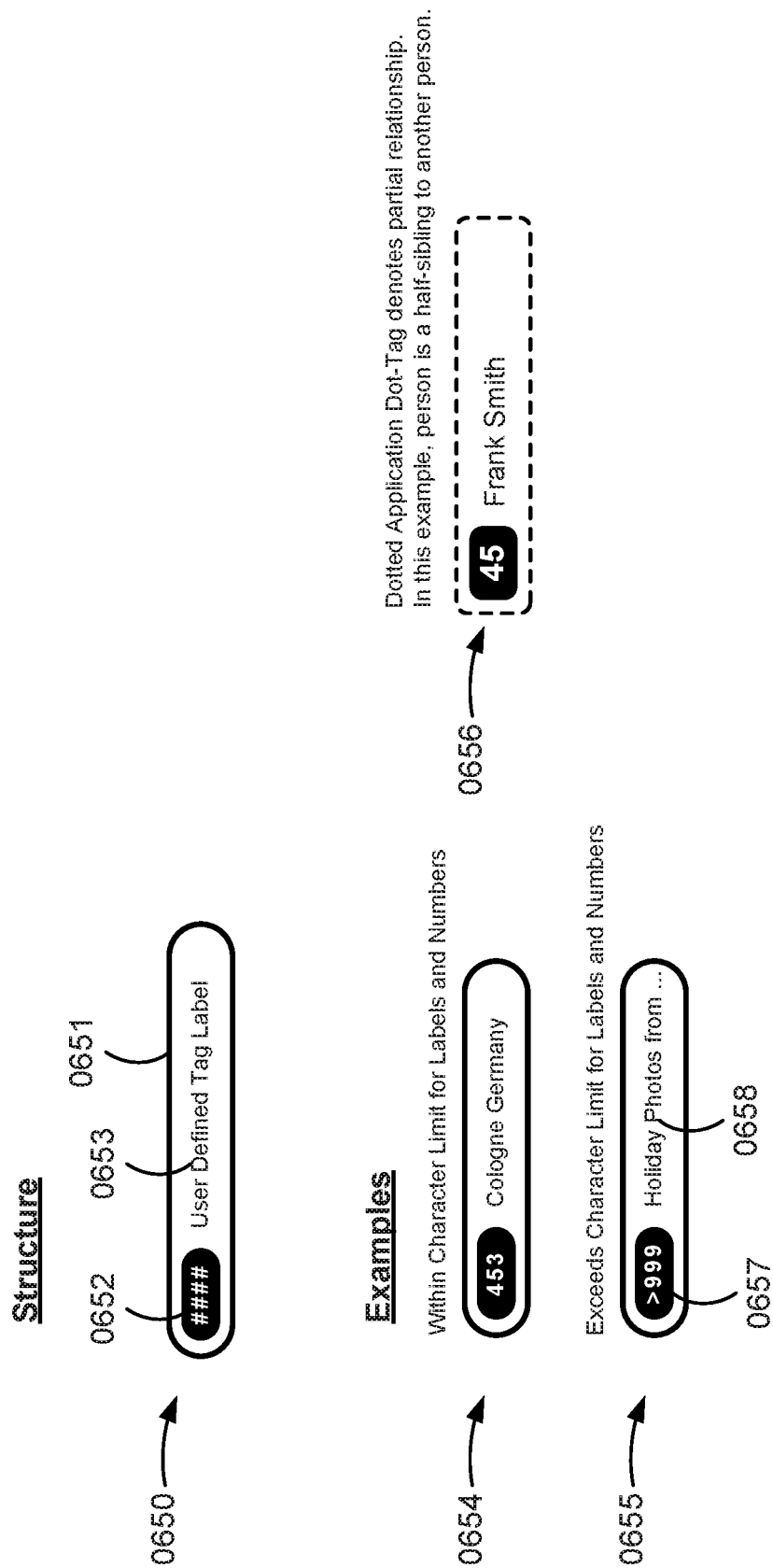


FIG. 30

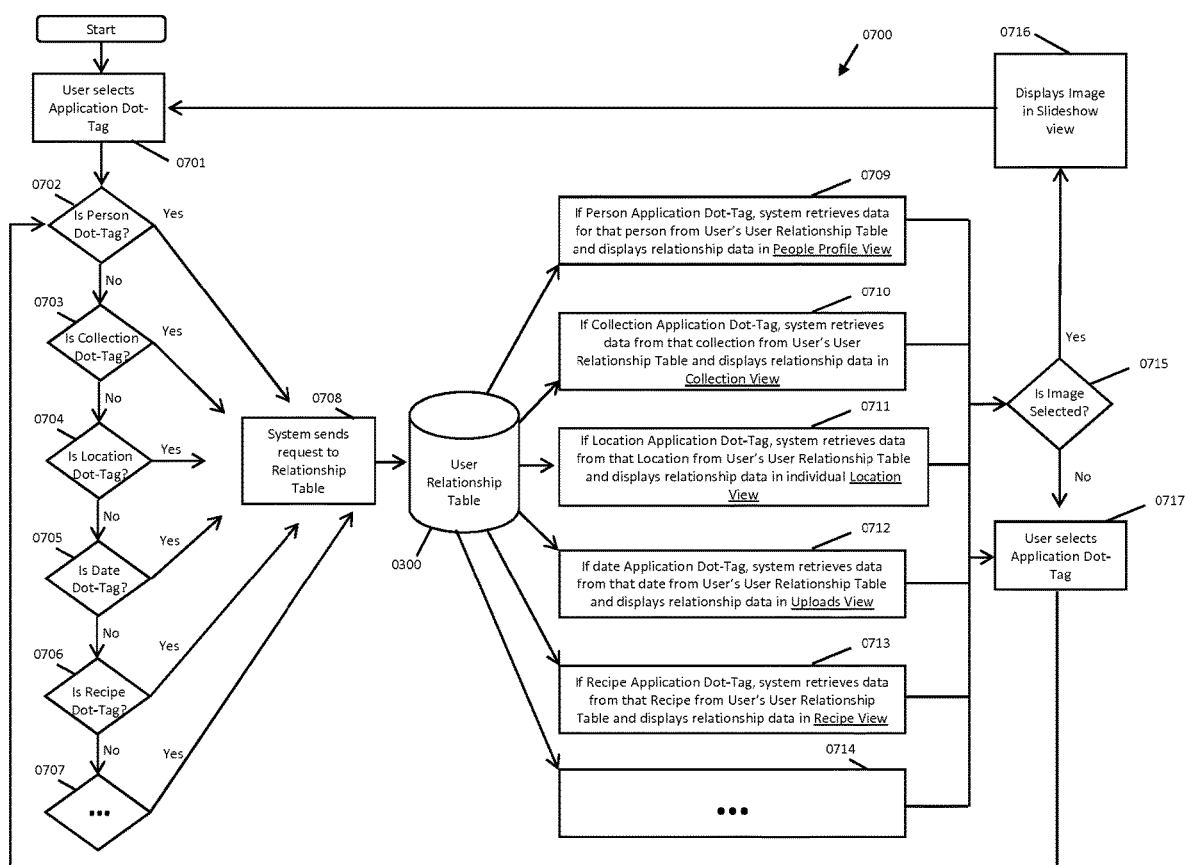


FIG. 31

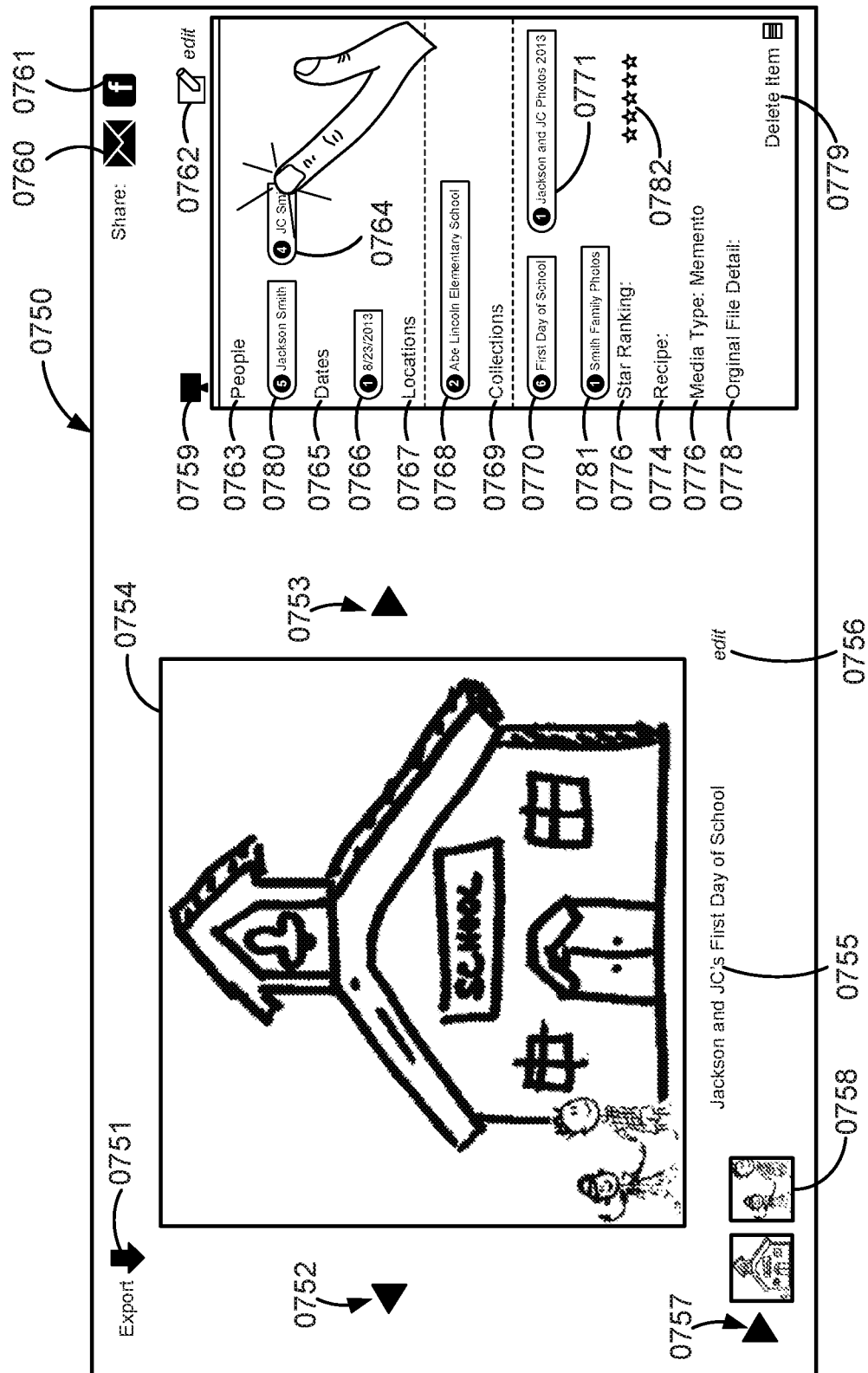


FIG. 32

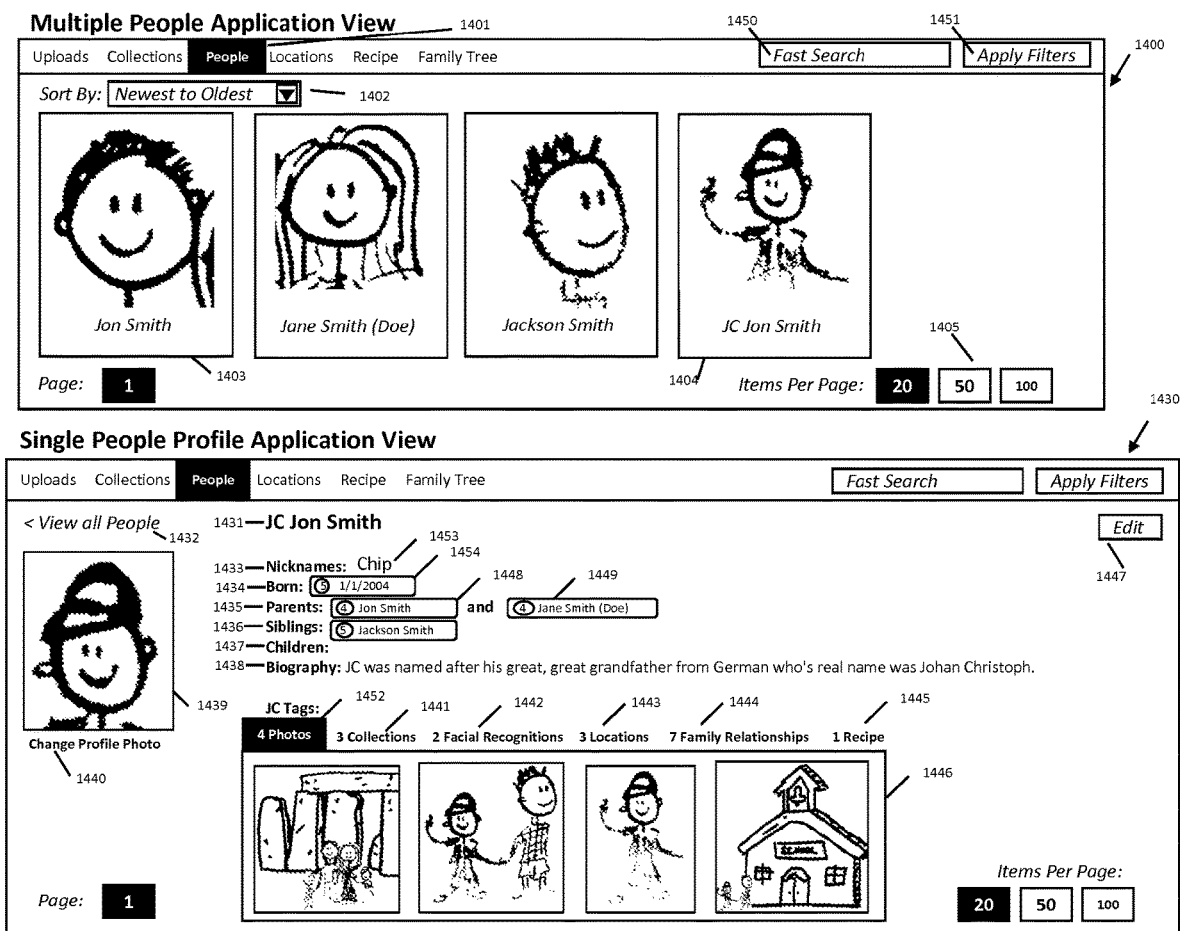


FIG. 33

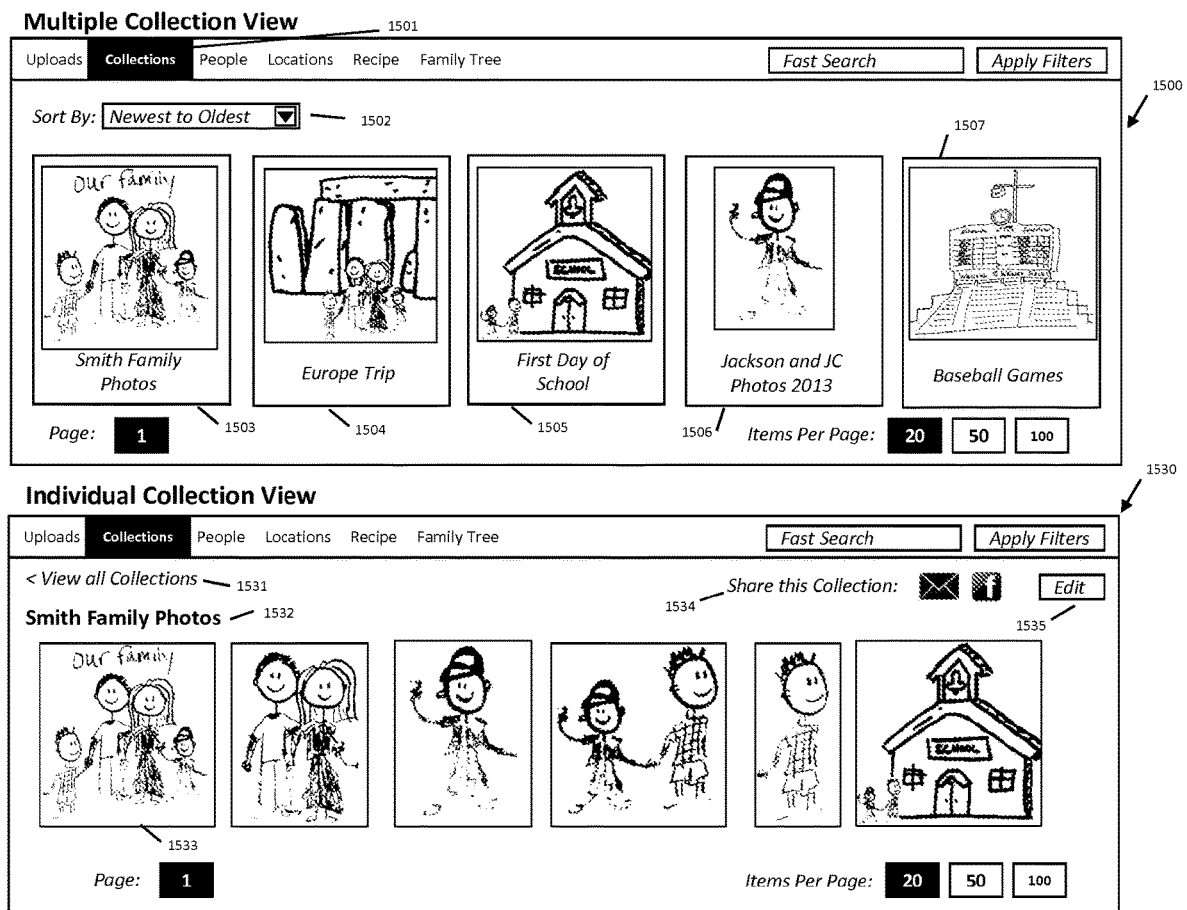


FIG. 34

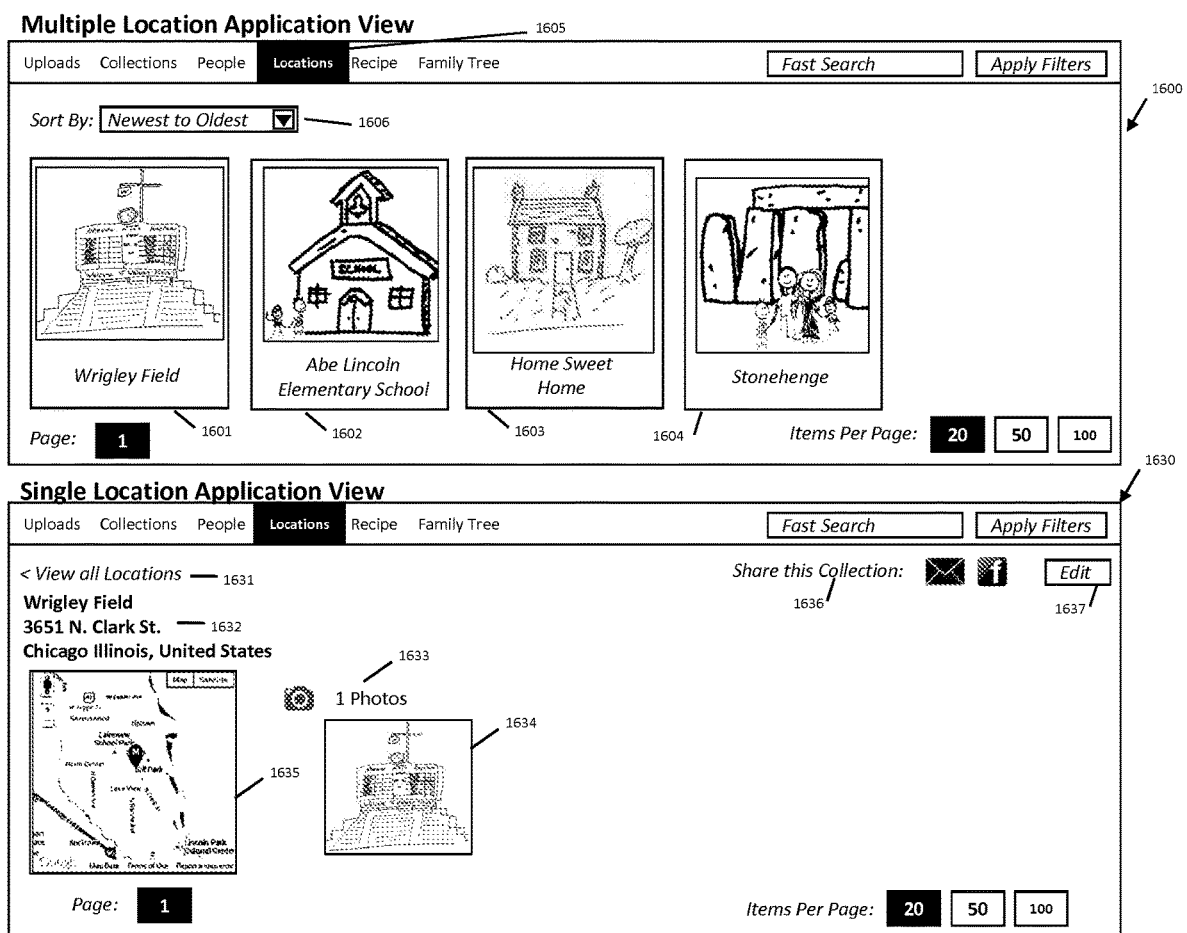


FIG. 35

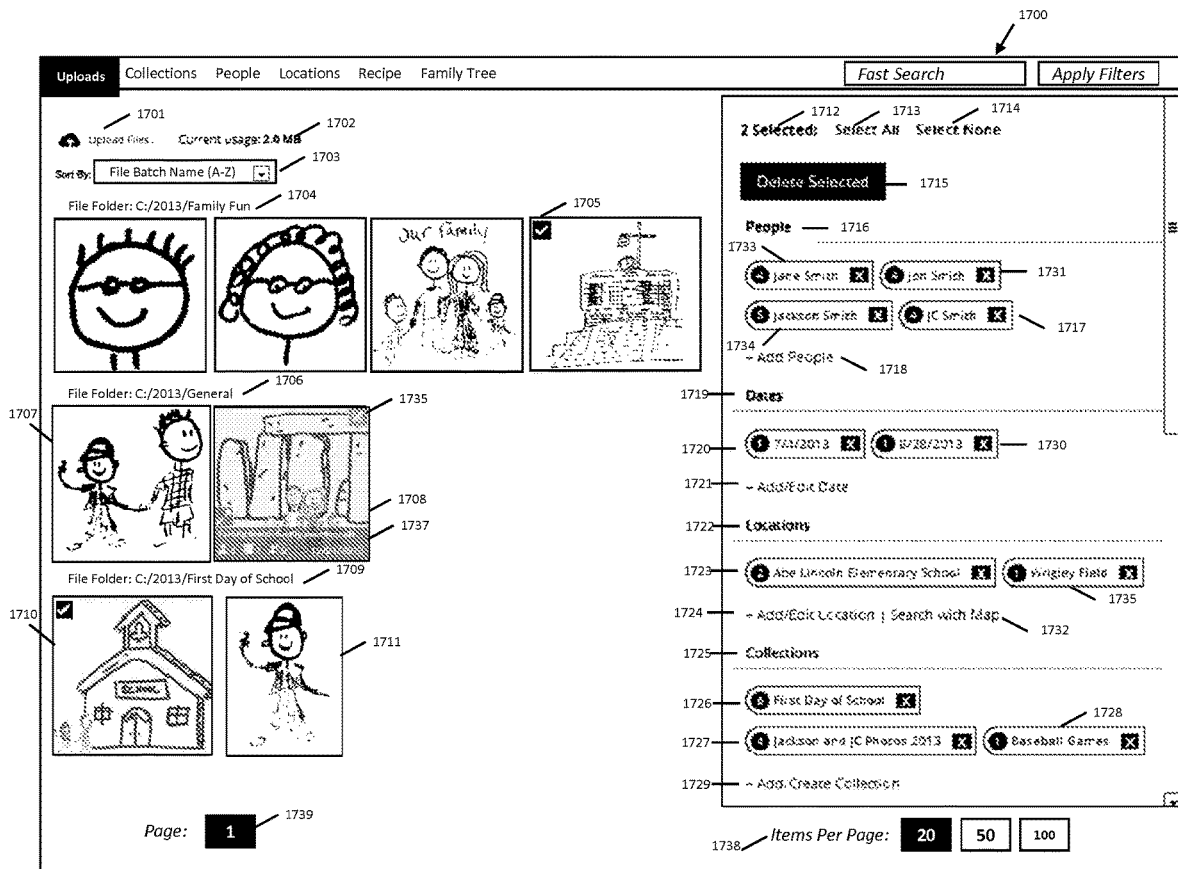




FIG. 36

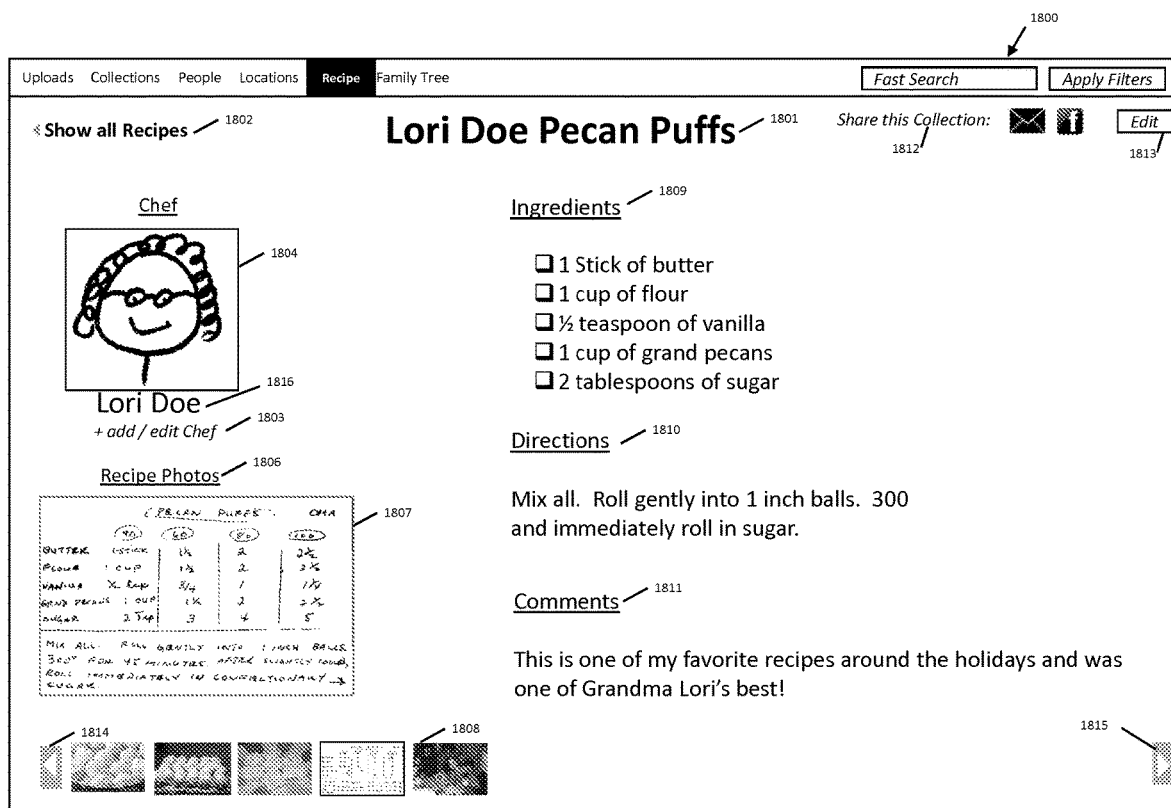


FIG. 37

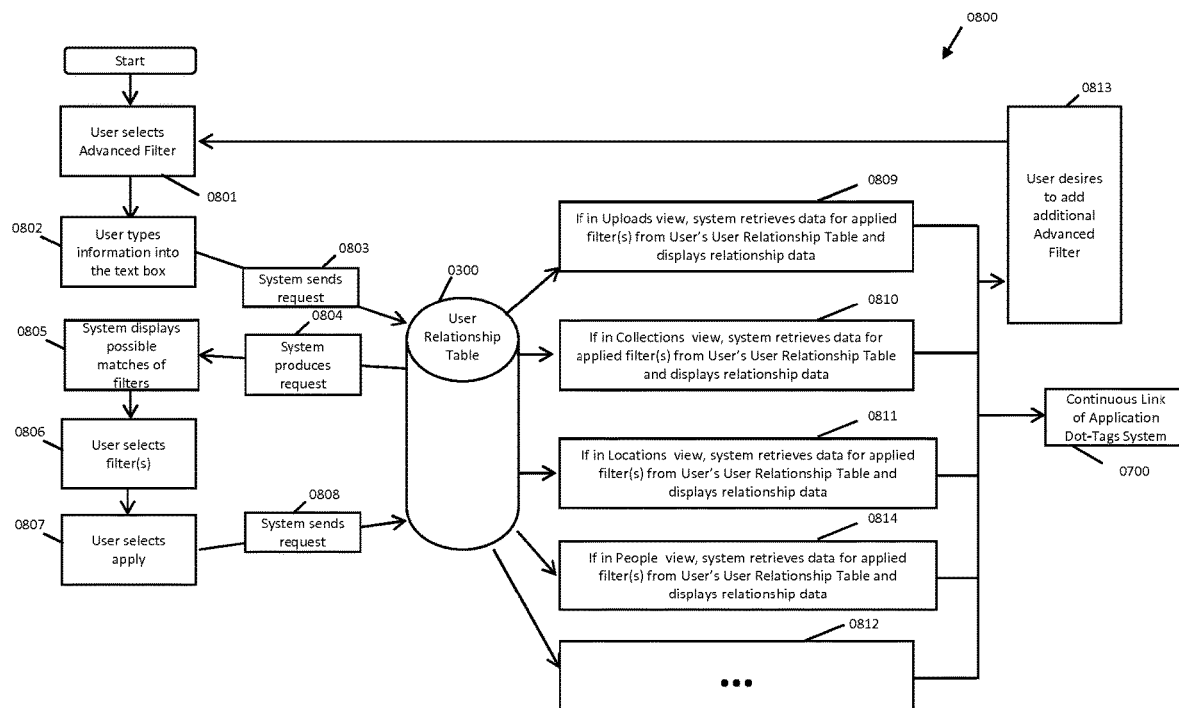


FIG. 38

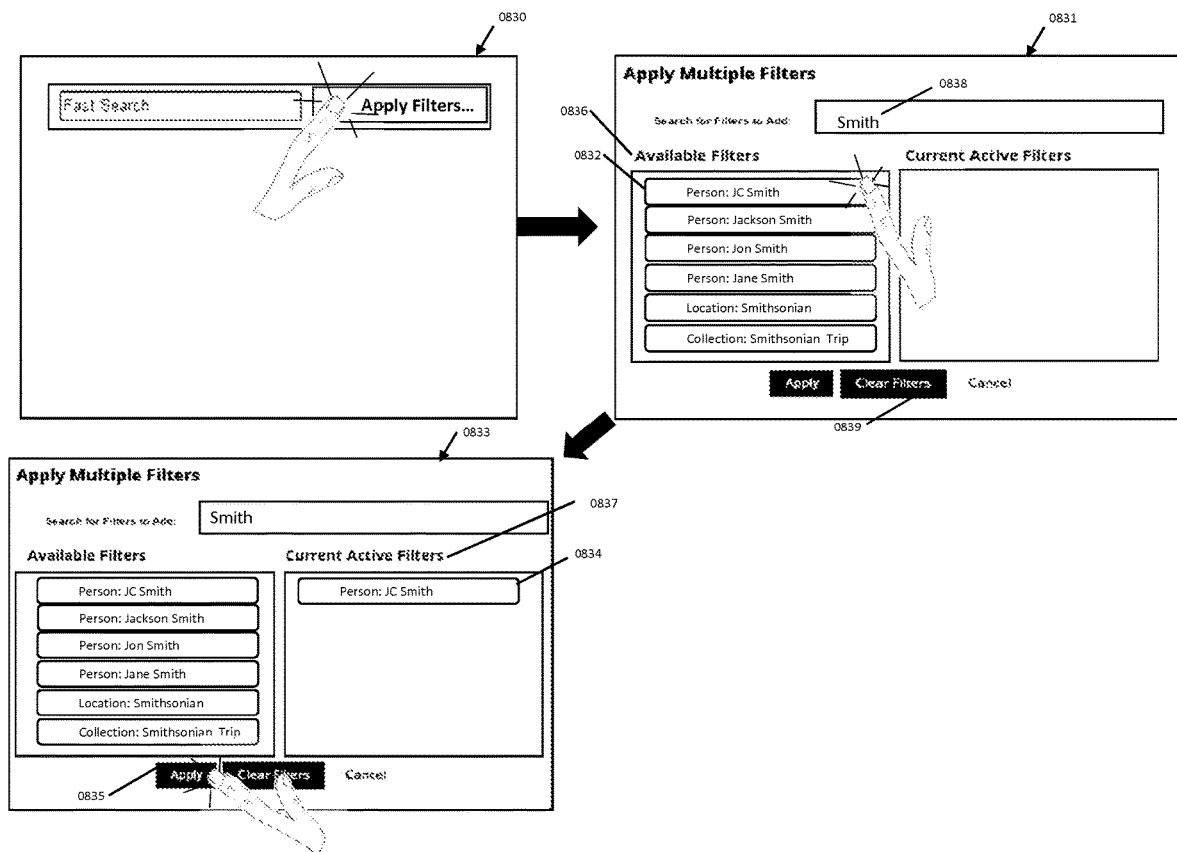
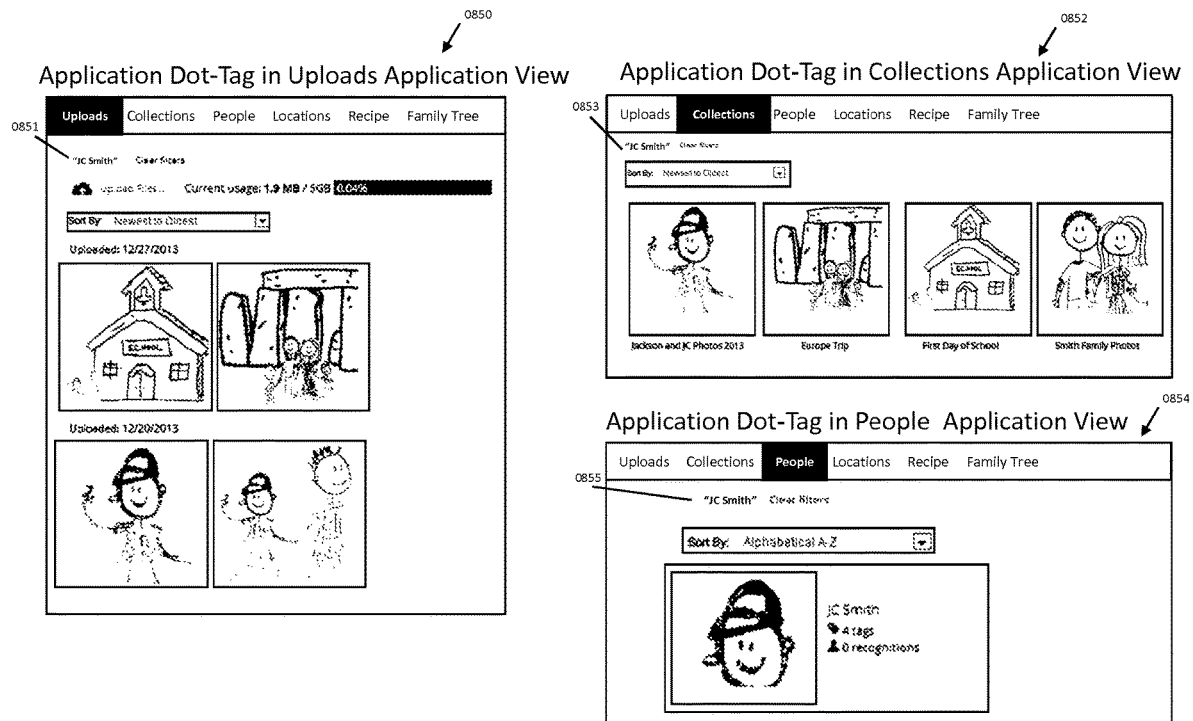


FIG. 39



U.S. Patent

Apr. 14, 2020

Sheet 40 of 50

US 10,621,228 B2

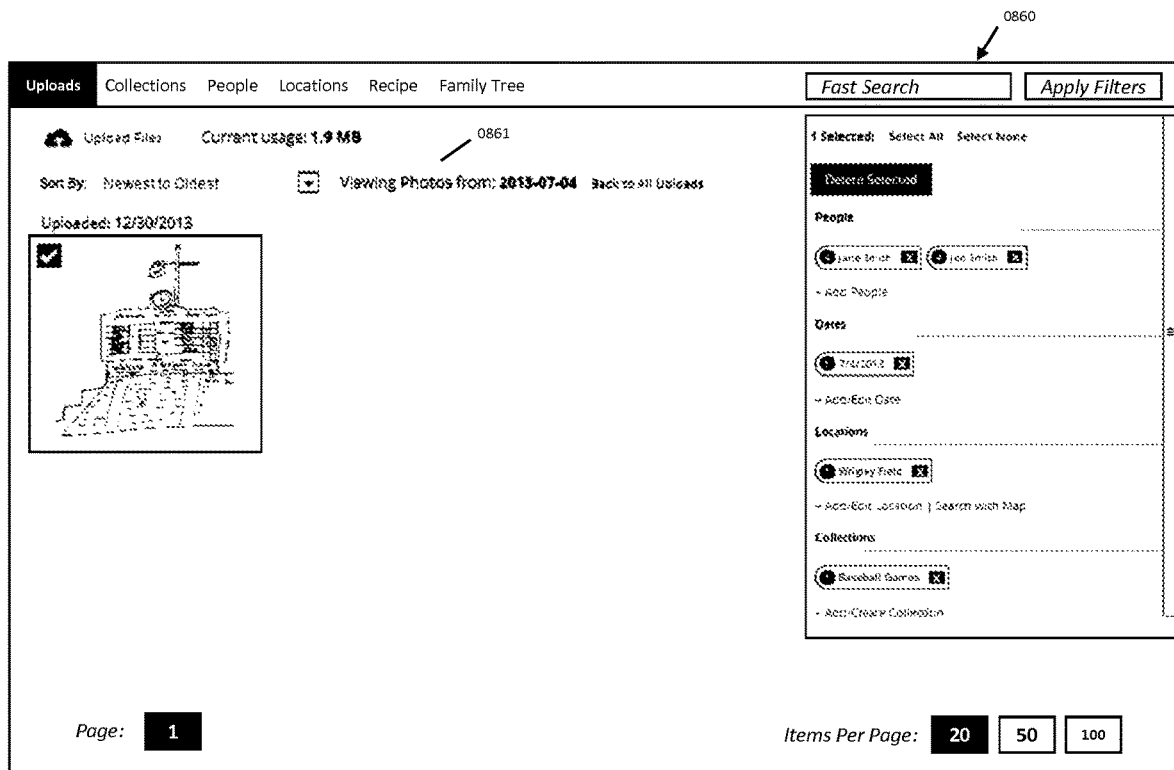
**FIG. 40**

FIG. 41

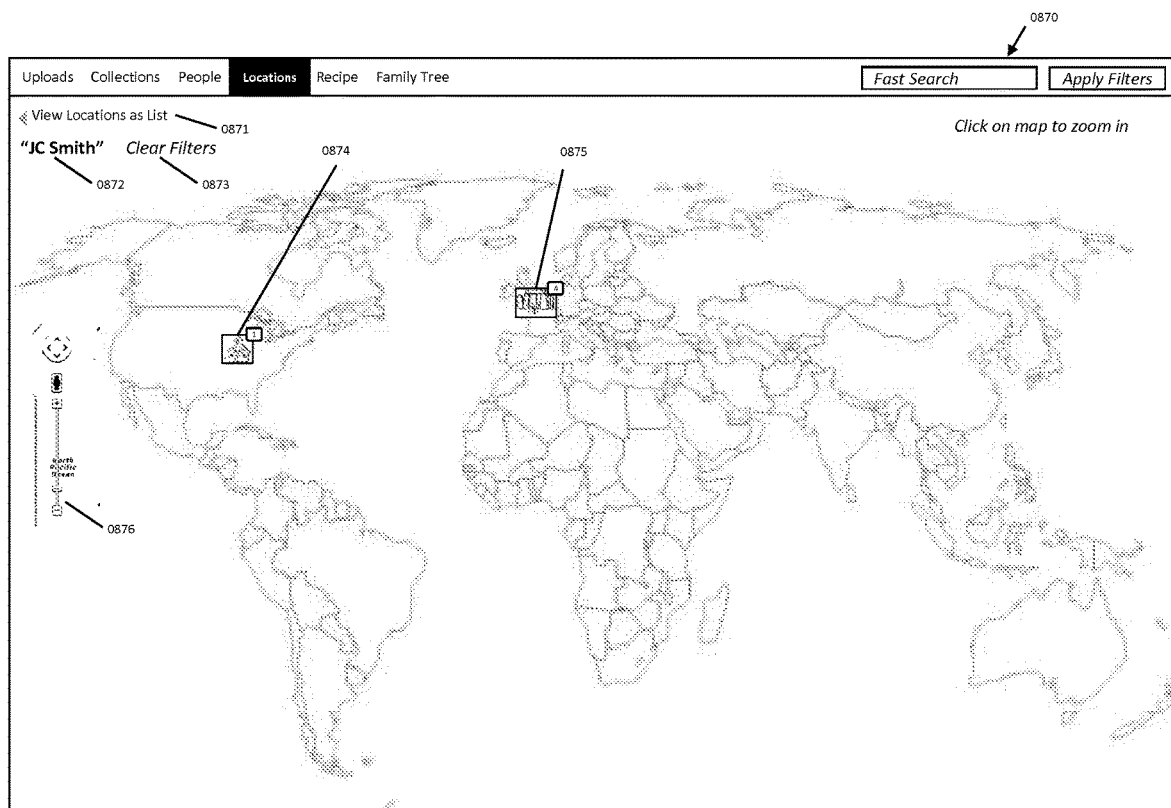


FIG. 42

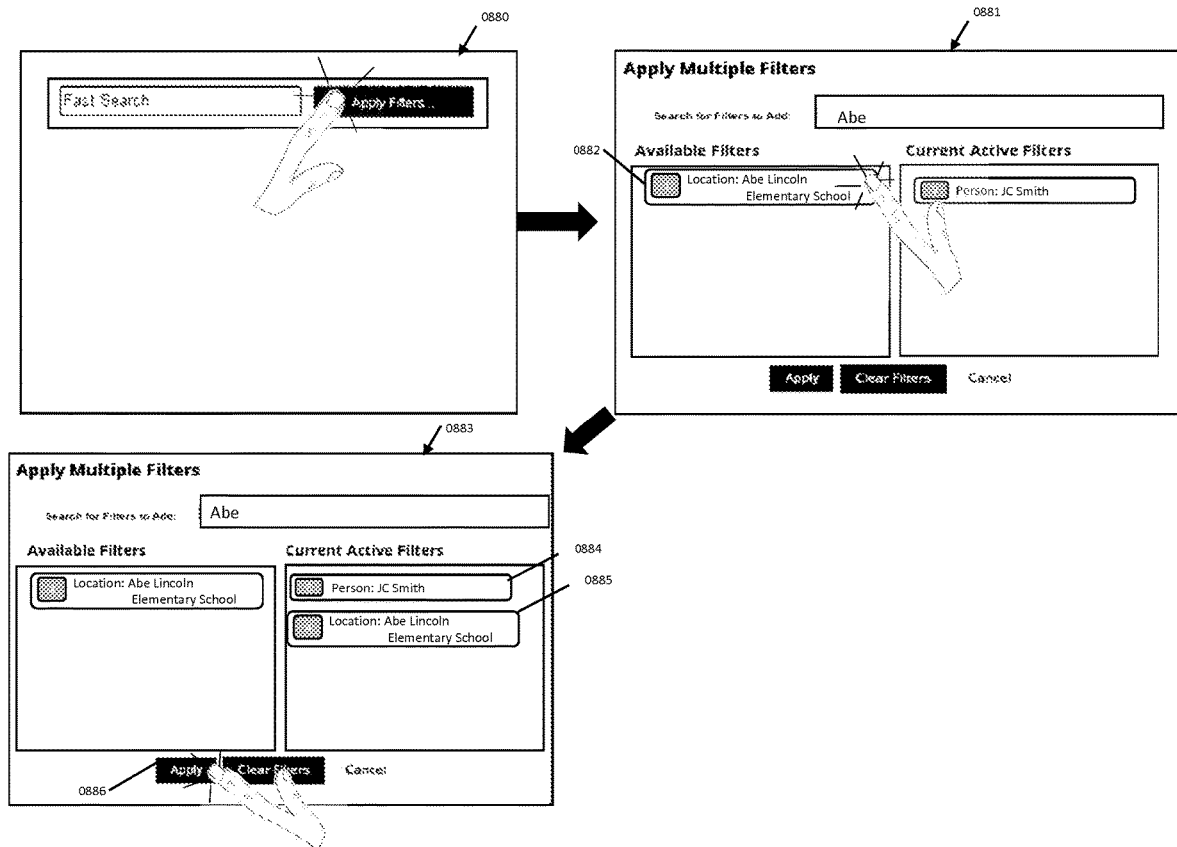
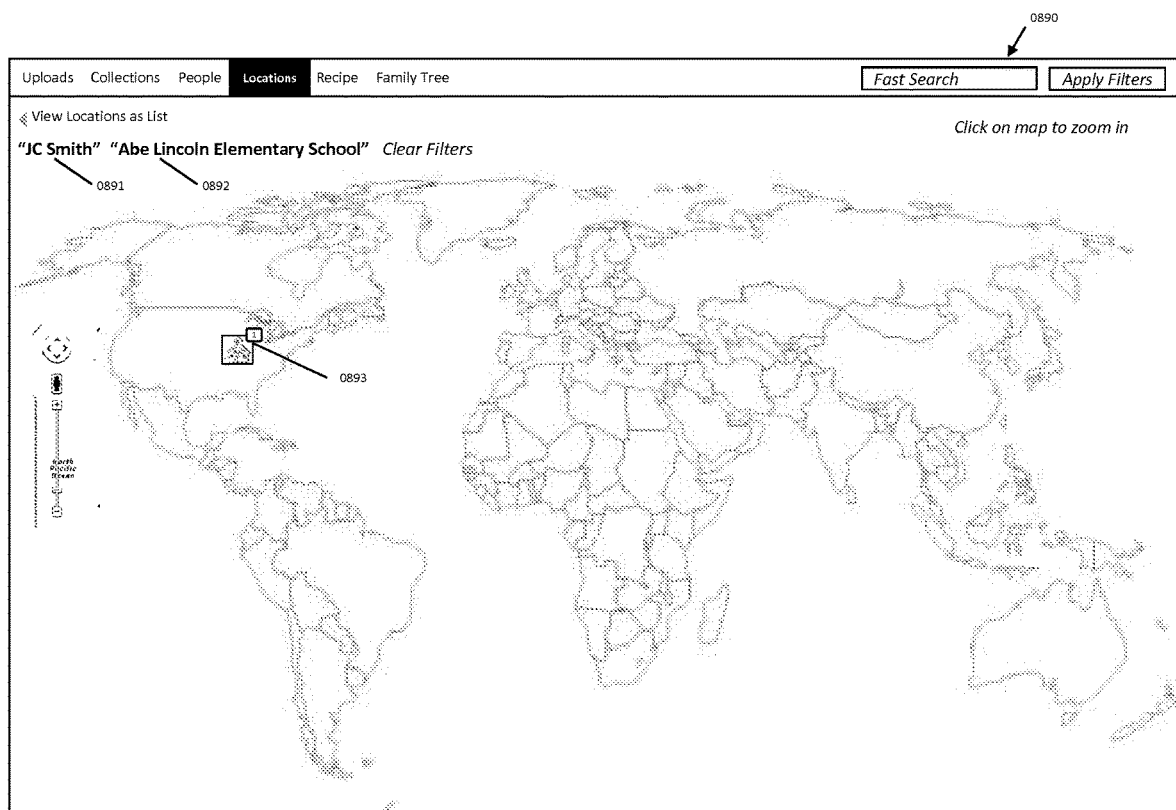


FIG. 43





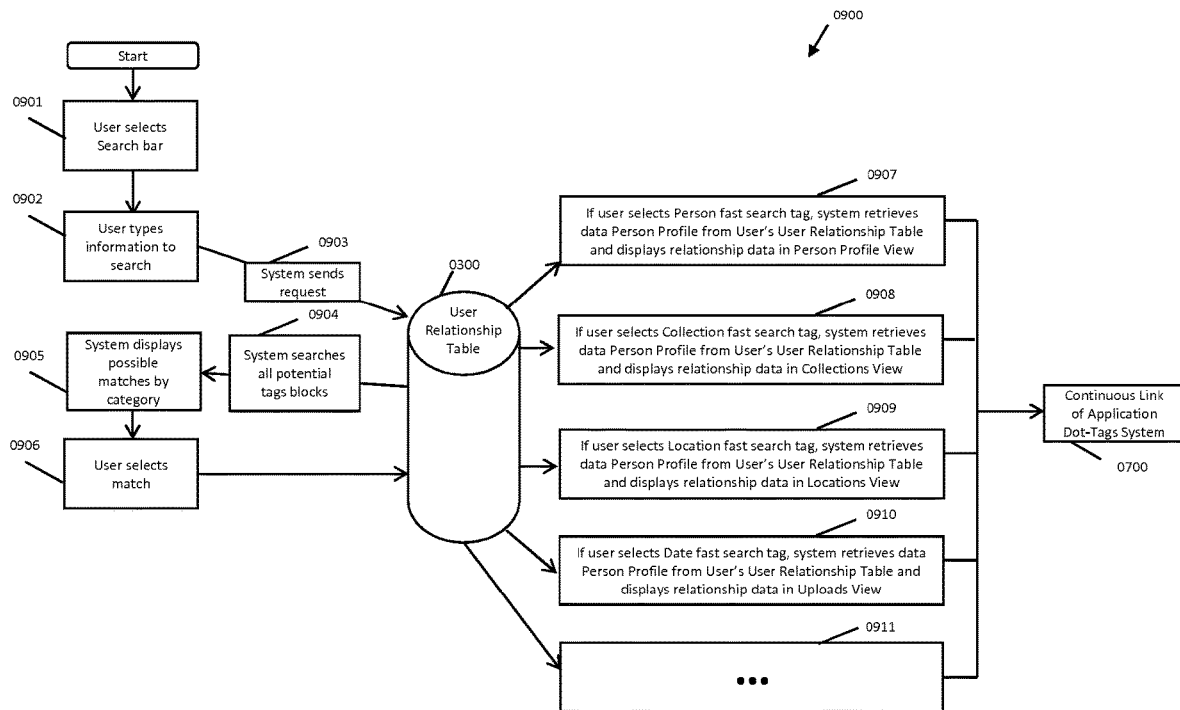
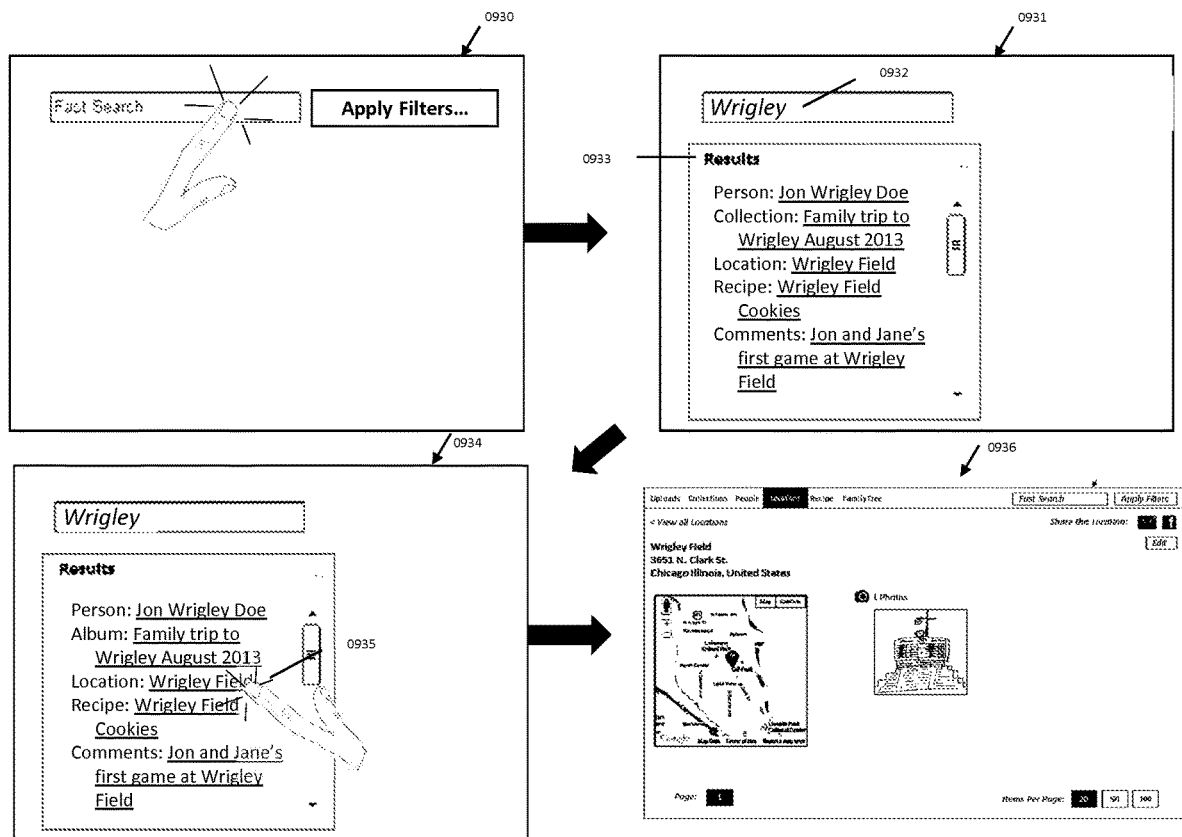
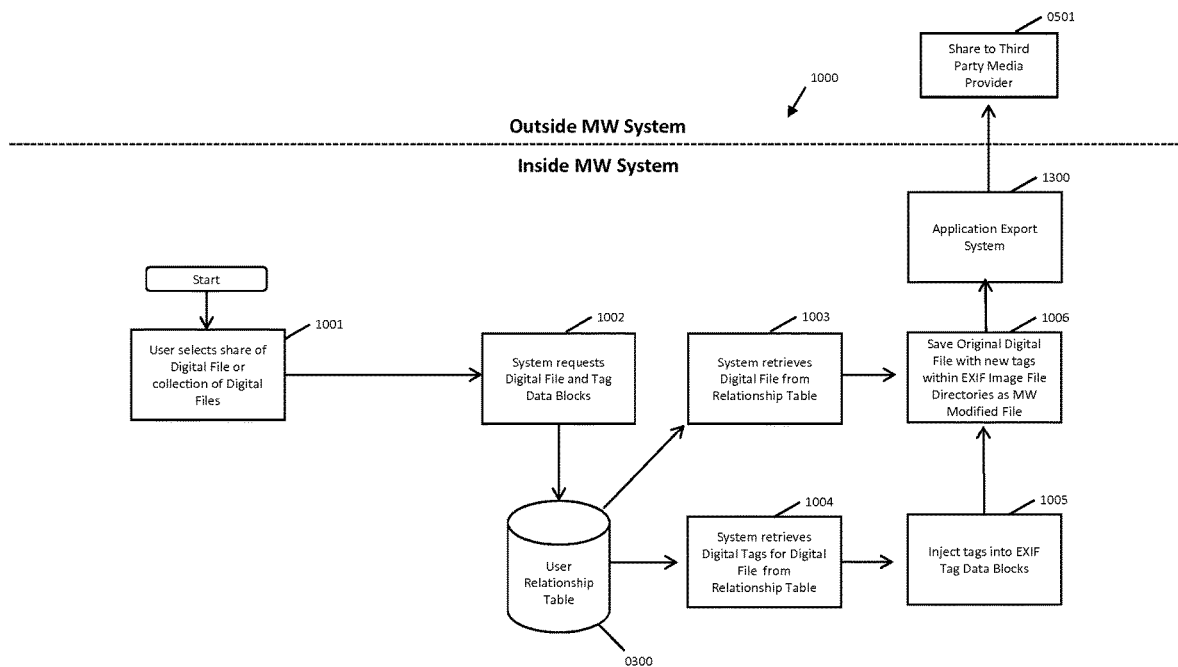
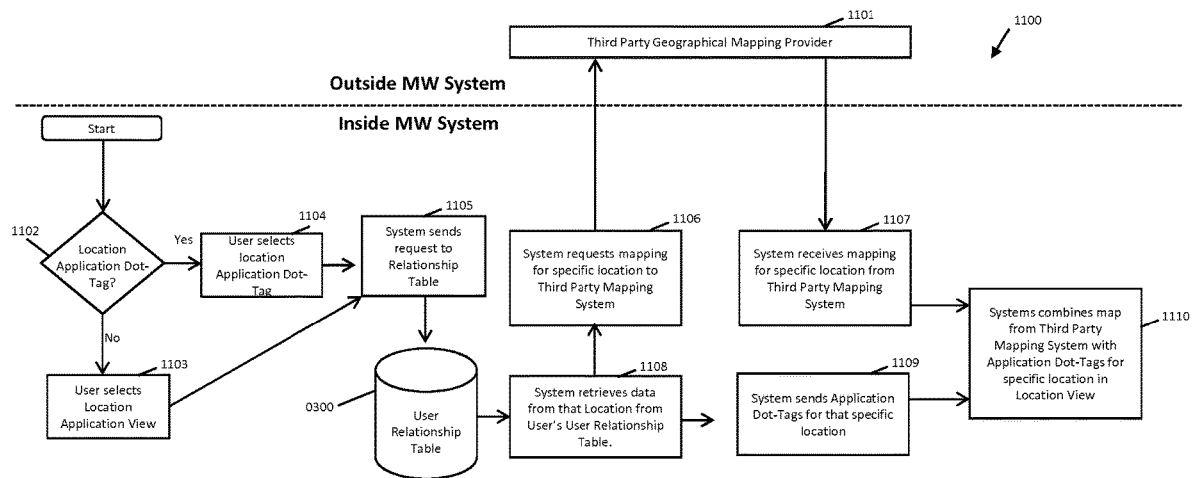
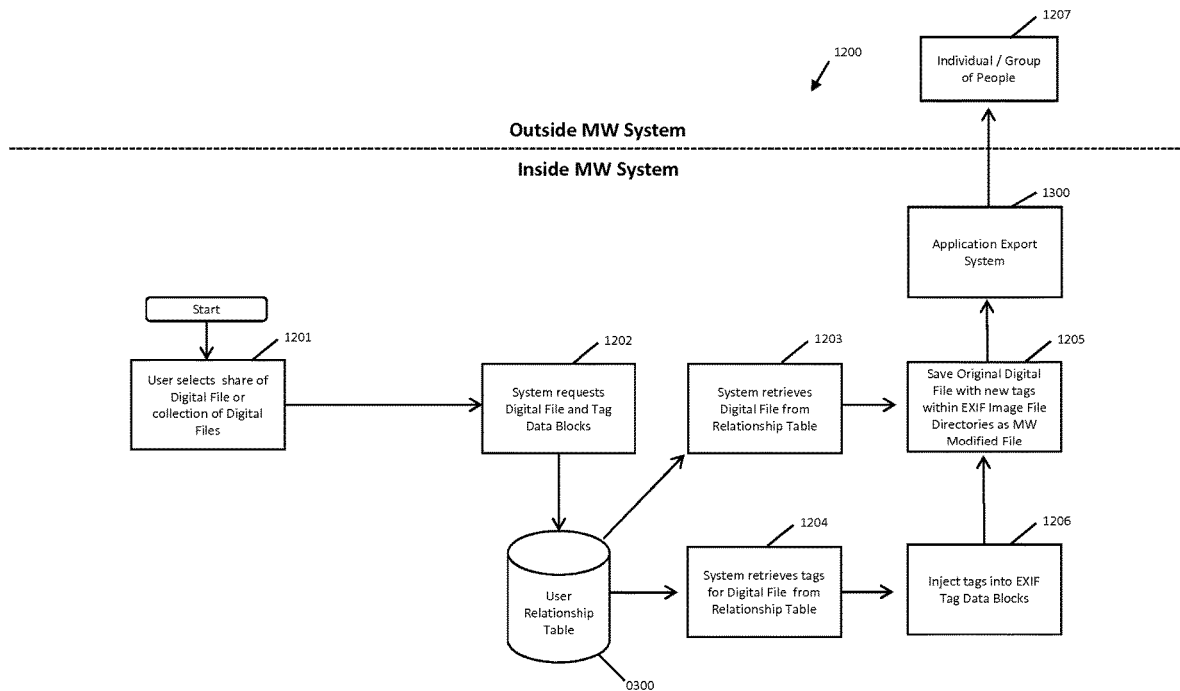
**FIG. 44**

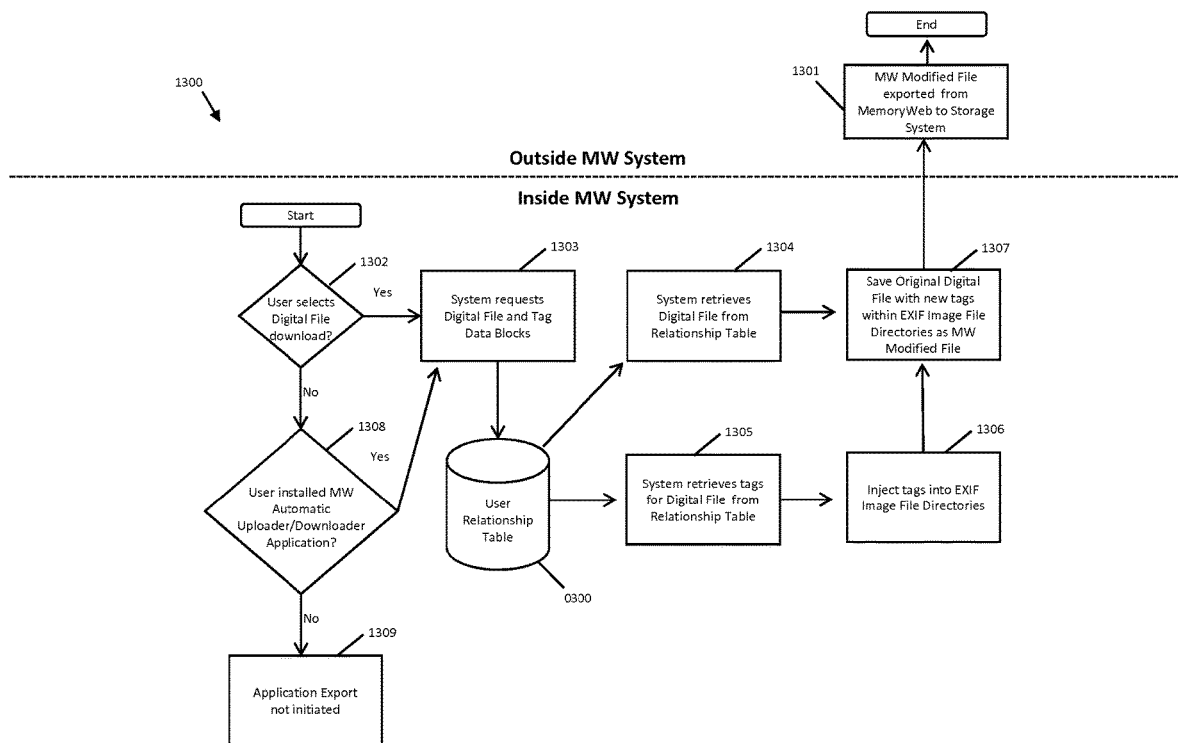
FIG. 45



**FIG. 46**

**FIG. 47**

**FIG. 48**

**FIG. 49**

U.S. Patent

Apr. 14, 2020

Sheet 50 of 50

US 10,621,228 B2

FIG. 50

Sample EXIF Image File Directories and ExifTool family 1 group names		Original File EXIF Tag Data		MW Modified File Tag Data	
	Description Title				
	Description Subject				
1404	Description Rating	1416		1410	
	Description Tags				
1405	Description Comments	1417		1411	CAPTION: Jackson and JC's first day at school! PERSON: Jackson Smith, JC Smith LOCATION NAME: Abe Lincoln Elementary School COLLECTION: First Day of School COLLECTION: Jackson and JC Photos 2013 DATE: 8/28/2013
	Origin (Authors, Date Taken, Date Acquired, Copyright)				
	Image (Image ID, Dimensions, Width, Height, etc.)				
	Camera (Camera Maker, Camera Model, etc.)				
	Advanced Photo (Lens Maker, Lens Model, etc.)				
1406	GPS Latitude	1418		1412	39; 46; 4.3774999999999999
1407	GPS Longitude	1419		1413	89; 39; 55.31999999999999953
	File Name	IMG_3826.JPG			IMG_3826.JPG
	File Item Type	JPG			JPG
1408	File Folder Path	C:\Photos\2013 1420		1414	C:\Photos\MW Backup\2013
1409	File Date Created	11/01/2013 10:00 AM 1421		1415	08/28/2013 8:00 AM
	File Date Modified				
	File Size	2.42 MB			2.42 MB
	File Attributes	A			A
	File (Offline availability, Offline status, Shared with, Owner, Computer, etc.)				

US 10,621,228 B2

1

**METHOD AND APPARATUS FOR  
MANAGING DIGITAL FILES****CROSS-REFERENCE TO RELATED  
APPLICATIONS**

This application is a continuation of U.S. patent application Ser. No. 16/536,300, filed Aug. 8, 2019, which is a continuation of U.S. patent application Ser. No. 15/375,927, filed Dec. 12, 2016, now U.S. Pat. No. 10,423,658, which is a continuation of U.S. patent application Ser. No. 14/193,426, filed Feb. 28, 2014, now U.S. Pat. No. 9,552,376, which is a continuation-in-part of U.S. patent application Ser. No. 13/157,214, filed Jun. 9, 2011, now U.S. Pat. No. 9,098,531, each of which is hereby incorporated by reference herein in its entirety.

**FIELD OF THE INVENTION**

The present invention relates generally to the management of digital files and, more particularly, to a computer-implemented system and method for managing and using digital files such as digital photographs.

**BACKGROUND OF THE INVENTION**

Prior to the invention of digital photography, people tended to share photos by displaying printed copies in frames and albums, or would store them in a container in hope of preserving these assets for future use or future generations. Important photos would often be inscribed on the back with significant details (people, location, event, etc.) to preserve the memory of that particular occasion. Many people would share their memories by assembling an album that could be viewed with others. Occasionally, extra copies of special photos were printed for friends, relatives, etc. At one time, film slide shows were also a popular medium for sharing photo memories.

With the evolution of digital files, there has been explosive growth in the number of individuals taking digital photos, converting old photos to digital copies, making movies and gathering digital documents and in the sheer number of files people are capturing digitally. Today, virtually every personal computing device contains some kind of photo, movie or other type of digital file creator/player/viewer/storer/etc.

At the same time, there is little to no cost for people to store large amounts of photos in various "containers" of the modern age. Facebook, Flickr, Shutterfly and countless other social media and specialty digital files sites allow users to post and share images to a community with a frequency and ease that continues to feed the fire of the digital revolution. However, they don't allow much organization of digital tags, dynamic viewing of digital files, and the ability to export the digital files with new digital tags. Questionable and ever-changing privacy terms for user/account information, including digital files, have also left the marketplace leery of posting their full digital archive and associated context to these sites.

What is needed to complement the widespread availability of digital files is a medium that allows people to organize, view, preserve and share these files with all the memory details captured, connected and vivified via an interactive interface. Such a solution would allow digital files, including documents, photos, videos and audio, to tell a full story now, and for generations to come.

2

**SUMMARY**

In accordance with one embodiment, a computer-implemented method of associating digital tags with digital files comprises (1) storing, on one or more non-transitory computer-readable storage media, a plurality of digital files, each of the digital files having embedded therein content data and metadata including tags; (2) receiving, via a user interface device of a client device, a first tag label containing alphanumeric text created and inputted by a user of the client device; (3) modifying, using a controller device, a selected first one of the tags of the metadata in a first of the digital files to include the first tag label; (4) receiving, via the user interface device or another user interface device, an instruction to search for all of the digital files having at least the first tag label; (5) responsive to receiving the instruction, automatically searching for all of the digital files having at least the first tag label; and (6) displaying, on a video display device associated with the client device, a first indication of the first tag label.

In another embodiment a computer-implemented method of associating digital tags with digital files comprises storing, on one or more non-transitory computer-readable storage media, a plurality of digital files, each of the digital files having a content data portion and a metadata portion including tags; displaying, on a video display device associated with a client device, a first graphical representation of a first tag label of a first of the tags and associated with a first of the digital files; receiving, via a user interface device of the client device, a selection by a user of the client device of the first graphical representation of the first tag label as a search filter criterion or a search string entered via the user interface device corresponding to the first tag label; responsive to the receiving, automatically searching through the digital files, using at least the first tag label as a search filter, for the digital files satisfying at least the search filter criterion; and displaying, on the video display device, an indication of the first tag label and a representation of the number of the digital files satisfying at least the search filter criterion.

In accordance with a further embodiment, a web-based digital file storage system comprises a digital file repository for storing and retrieving digital files; a digital tagging system permitting the user to assign a plurality of digital tags to each of the digital files, wherein the digital tagging system comprises at least one type of data selected from the group consisting of a person's name, a location, a recipe, a date, a family relationship, a person's profile, an event name, a rating, and a document type; a search filter, wherein the search filter allows the digital files to be searched according to a plurality of types of data; and a user interface that presents the digital files on a user's screen based on the digital tags, wherein the user interface further comprises a digital tag image, the digital tag image having at least one type of data represented thereon with text.

As described in detail below, the various embodiments provide much-needed platforms that save a user significant time, provide significant information with minimal screen space, and provide an appealing and customizable interface that will enhance the user experience.

**BRIEF DESCRIPTION OF THE DRAWINGS**

The invention may best be understood by reference to the following description taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a screenshot of an organizational functionality view of one embodiment of the disclosed system.



## US 10,621,228 B2

3

FIG. 2 is a screenshot of a photo detail view of one embodiment of the disclosed system.

FIG. 3 is a screenshot of a gallery view of an event or album of one embodiment of the disclosed system.

FIG. 4 is a screenshot of an individual event or album view of one embodiment of the disclosed system.

FIG. 5 is a screenshot of a location view of one embodiment of the disclosed system.

FIG. 6 is a screenshot of a people thumbnail view of one embodiment of the disclosed system.

FIG. 7 is a screenshot of a people profile view of one embodiment of the disclosed system.

FIG. 8 is a screenshot of a family tree view of one embodiment of the disclosed system.

FIG. 9 is a screenshot of a timeline view of one embodiment of the disclosed system.

FIG. 10 is a screenshot of a recipe chart, according to one embodiment of the disclosed system.

FIG. 11 is a screenshot of an album chart view of one embodiment of the disclosed system.

FIG. 12 is a screenshot of an event chart view of one embodiment of the disclosed system.

FIG. 13 is a screenshot of a people chart view of one embodiment of the disclosed system.

FIG. 14 is a screenshot of a family tree chart view of one embodiment of the disclosed system.

FIG. 15 is a screenshot of a location chart view of one embodiment of the disclosed system.

FIG. 16 is a screenshot of a recipe chart view of one embodiment of the disclosed system.

FIG. 17 is a screenshot of a slideshow view of one embodiment of the disclosed system.

FIG. 18 is a screenshot of an advanced search filter view of one embodiment of the disclosed system.

FIG. 19 is a screenshot of a homepage view of one embodiment of the disclosed system.

FIG. 20 is a diagram of the Overall System Process Flow of MemoryWeb.

FIG. 21 is a diagram of the System for Reading Phase, System Interpreting, and Adding Digital File and Corresponding Data to Relationship Table Phase.

FIG. 22 is a table of the EXIF and MemoryWeb Tag Data Blocks

FIG. 23 is a table of the Microsoft Windows and MemoryWeb Tag Data Blocks.

FIG. 24 is a table of the MemoryWeb Person Tag Data Blocks.

FIG. 25 is a diagram of the Third Party Facial Recognition System.

FIG. 26 is a diagram of the Third Party Media System (Data Exchange).

FIG. 27 is a table of the User Settings Table.

FIG. 28 is a diagram of the Application Digital Tag Organizer System.

FIG. 29 is an illustration of the Application Dot-Tag Shape and Content.

FIG. 30 is a diagram of the Continuous Link of Application Dot-Tag System.

FIG. 31 is an illustration of the Slideshow View of Digital File and Application Dot-Tags.

FIG. 32 is a screenshot of People Application Views.

FIG. 33 is a screenshot of Collection Application Views.

FIG. 34 is a screenshot of Location Application Views.

FIG. 35 is screenshot of Uploads Application View.

FIG. 36 is a screenshot of Recipe Application View.

FIG. 37 is a diagram of the Advanced Filters System.

4

FIG. 38 is a screenshot of Adding the First Application Dot-Tag using Advanced Filter.

FIG. 39 is a screenshot of Single Application Dot-Tag Filter for Each Application View.

FIG. 40 is a screenshot of Single Application Dot-Tag Filter for Date in Uploads Application View.

FIG. 41 is a screenshot of the Single Application Dot-Tag Filter in Location Application View.

FIG. 42 is a screenshot of Adding Another Application Dot-Tag Filter.

FIG. 43 is a screenshot of the Multi-Dot-Tag Filter in Location Application View.

FIG. 44 is a diagram of the Keyword Fast Search System.

FIG. 45 is a screenshot illustration of Using Keyword Fast Search.

FIG. 46 is a diagram of the Share to Third Party Social Network Provider System.

FIG. 47 is a diagram of the Third Party Location Mapping System.

FIG. 48 is a diagram of the Share to Individual System.

FIG. 49 is a diagram of the Application Export System.

FIG. 50 is a table illustrating the Digital File Image File Directory Data Blocks of JPG Photo within Microsoft Before and After MemoryWeb.

#### DETAILED DESCRIPTION OF ILLUSTRATED EMBODIMENTS

Although the invention will be described in connection with certain preferred embodiments, it will be understood that the invention is not limited to those particular embodiments. On the contrary, the invention is intended to cover all alternatives, modifications, and equivalent arrangements as may be included within the spirit and scope of the invention as defined by the appended claims.

The present disclosure relates to one or more of the following features, elements or combinations thereof. A web-based digital file storage system is disclosed. The storage system may include a digital file repository for storing and retrieving digital files, such as photos, a digital tagging system configured to assign digital tags to the digital files, a sorting system, and a user interface.

The digital tagging system may include various types of data, such as a person's name, a location, a recipe, a date, a family relationship to the user, an event name, a rating, sharing rights, file type and a document name. The sorting system can allow the digital files to be searched and sorted according to a plurality of types of data and can be used for creating and organizing special views. The user interface may be user-configurable, and can present the digital files on a user's screen based on these user inputs.

The digital file repository may be accessible over the Internet. The sorting system may provide a user with the ability to search based on a plurality of digital tags. The disclosed system may also provide a way to track relationships between users, so that a family tree can be displayed.

Recipes may also be linked to a person's name, with, for example, a video and digital copy of original hand-written recipe to create a recipe view.

Moreover, the digital files and data can be exported as a single file with the digital tagging embedded within the exported file.

In another embodiment, a method of storing digital photographs is disclosed. The method may include the steps of storing a digital photograph in a file repository, associating a plurality of digital tags having different tag types with the digital photograph, providing a search function that permits

## US 10,621,228 B2

5

searching by a plurality of digital tag types and provides a search result, and providing a user-configurable output to display the search result. The digital tag types may include, for example, a person's name, a location, a recipe, a date, a relationship, an event name, a rating, file type and a document type. The method may include a further step of providing access to the file repository via the Internet. The method may also allow for tracking relationships between users so that a family tree can be displayed.

Additional features of the disclosure will become apparent to those skilled in the art upon consideration of the following detailed description of preferred embodiments exemplifying the best mode of carrying out the invention as presently perceived.

The presently disclosed method and application (herein alternatively referred to as a "system") provides users with an Internet-based interactive platform to gather, organize, view, share and archive digital files using a proprietary organization system and export tagging process. As used herein, the word "tag" refers to any type of digital data that can be assigned to a file to describe some aspect of that file through a tagging process. For images, the tagging is preferably in EXIF format. For videos, documents and other file formats, any appropriate format may be used. The disclosed system allows users to create, view and share digital files, which could represent, for example, the memories a user has collected from the past and present, and could incorporate additional memories for generations to come. As outlined herein, various embodiments are disclosed that can accomplish these and other goals.

One disclosed embodiment includes an import feature. Users can import media files from users' favorite sources (e.g., computers, mobile phones, social networks, etc.). If any meta-tag information is embedded within the media (e.g., date taken and GPS coordinates), the system could automatically read and utilize it for the user. Digital files, media, meta-tags, and other data discussed herein may be saved to one or more file repositories (also referred to as a database herein).

In another aspect of the disclosed system, organizational functionality is provided. Similar to the concept of writing certain information "on the back of a photo," the system's digital tagging system and organizing feature allows a user to arrange large amounts of digital files with tags that can characterize and document the digital file(s). Digital files can be individually or group organized at the same time for many tags including, but not limited to, a person's name, family relationships of the subjects to the user and between each other (e.g., mother/father), location, date, event, album, comments, document type (e.g., birth certificate, poetry), recipe, ranking or rating, and sharing rights. Tags can be assigned to a single file at a time, or to a plurality of files at once. For example, if a user wishes to assign the tag "grandma" to 100 photos at once, the system provides a way for a user to select all 100 photos and enter the tag only once. An example of the manner in which digital photos can be organized is presented in FIG. 1.

Yet another feature is the multiple views from which a user can display his or her digital media files and their tagged attributes. Using a user interface (e.g. a keyboard, mouse, or touch screen), users can select individual files, groups of files meeting specific criteria, or all files in their account from which to create views. These views may alternately take the form of a chart. These views will be auto-populated based upon either tag information already associated with the digital file upon import or the tags assigned to the digital files by the user within the aforemen-

6

tioned organization functionality. Each digital file can be enlarged, from any view or chart, by clicking an information ("i") button to show an enlarged version of the digital media file with all the tags that are assigned to that digital file, as illustrated in FIG. 2. In another embodiment, the user interface may be user-configurable, as discussed further herein.

The following views are shown with particularity. In FIG. 1, the gallery view allows the user to see all the digital media that are associated within a group such as an event or custom album. The gallery view for either events or albums is illustrated in FIG. 3.

As shown in FIG. 2, an individual album or event view allows one to see the files associated with a specific group. For example, one can view the digital files that relate to a group of files called "Trip to Italy 2011." The individual album or event view is illustrated in FIG. 4.

A location view, as shown in FIG. 5, identifies within an interactive map (Google map shown as an example), where digital files were taken or originated. The location view can also provide additional outputs such as a journey route that identifies the specific locations for an event or trip that can be customized by users.

A people view, as shown in FIG. 6, shows thumbnail photos of all the people in the system that can be clicked in for a people profile view. A people profile view, as shown in FIG. 7, shows a profile picture of an individual, their birth/death information, family relationships, overview (comments) on the person, as well as links to other views that contain that individual in the system.

A family tree view, as shown in FIG. 8, can illustrate interactive family trees where one can see the family tree of an individual or family. If a user clicks on an individual within the family tree, it will take him or her to the people profile view of that person.

The timeline view, as shown in FIG. 9, will be an interactive timeline that allows you to set ranges of digital files by year, month and day. The digital files shown in the timeline will also be interactive and if the user clicks on a digital file or group of digital files (e.g., event or album), the user will then view the information related to the digital file(s).

A recipe view, as shown in FIG. 10, will show a recipe along with any digital files that are associated with it. For example, a cherished family recipe may show a digital copy of the original handwritten recipe, a photo of the family member who was the chef and a video of the family member making the recipe.

Each of the aforementioned views may also be seen in a chart format view that is interactive when any item on the chart is clicked, the user will then be taken to a new screen that details all relevant digital files (and file types) for the clicked item.

For album or event chart views, as shown in FIGS. 11 and 12, the elements listed in those charts will include individuals who are part of each album/event, number of digital files, date and other pertinent information.

A people view, shown in FIG. 13, may demonstrate all the names of individuals that are in the system in an alphabetical listing. Such a people view can also contain details on each person such as the number of photos and videos that are associated with that person. The user can click on that person to pull up the profile view of the individual or click on the number of photos to see all the photos associated with that person.

In the family tree chart view, shown in FIG. 14, family lineage can be viewed in multiple ways. For example, a user

US 10,621,228 B2

7

can set himself as the tree anchor and then see a tree of all people entered into the database related to the user. The user could also set a contact as the tree anchor and then just view the descendants of that individual.

For a location chart view, as shown in FIG. 15, listings of all the locations that are in the system are displayed along with the number of digital files, as well as names of persons associated with each. A user can click on the location to see all the digital media files that are associated with a specific location.

A recipe chart, as shown in FIG. 16, can show recipes that uploaded to the system. Along with the ingredients and steps of each recipe, this view can identify the chef(s) name, number of photos and videos associated with each.

For any of the views, the user can click on the digital file to start a slideshow feature that will allow them to scroll through an enlarged view of the digital file as illustrated in FIG. 17.

Another aspect of the disclosure is the search filter. This filter allows users to select one or more criteria that will narrow down their results to just those digital files matching input criteria. The entire system can be filtered by, for example, key words (or plurality of key words), event names, location, people, albums, star rating, file type, document type, and dates. A user may filter based on more than one criterion at a time. To help users quickly identify digital files that may still need to be organized, the advanced search filter also allows users to isolate files that have no date, no location, no people, no specific date/range, no upload date information or are lacking any other tag.

It should be noted that in one embodiment, searching via key word will search through all tagged information (user populated or auto-generated upon import). For example, if a user searched for the term "Ohio," the system would search for that term associated with any file in any way. If the user had files with Ohio as a state, file name, street name, person's name, file comment, etc., all would be retrieved.

Settings applied in the advanced search filter can cumulatively carry over to any subsequent pages until new criteria are selected. For example, a user can apply a filter to retrieve files associated with a particular person. Then the user can set a date range to further narrow results to show only those files for that selected person within the date range. Any pages viewed from that point forward throughout the entire site would only contain files associated with person and the date range specified. The advanced search filter is illustrated in FIG. 18.

Yet another feature can be a user's homepage, as illustrated in FIG. 19, that can summarize the user's content within the system including relevant information in the system. It is contemplated that a user's homepage may show a summary of the total number of photos, videos, documents and audio files that the user has uploaded. In this embodiment, for each group of digital files (e.g., photos), the percent of files that has been organized with pertinent data such as date, name(s) and location can be noted. In addition, the homepage can show a list of people that are in the system and the respective count for photos, videos, documents and audio files associated with each person. Also contemplated is a summary of the events, albums and locations that have been entered into the system. The user homepage may serve as an executive summary dashboard of one's entire system and can be modified to provide data in an executive summary format for a user.

Another feature is that the entire system including the dynamic views can be presented in a wide range of user outputs—e.g. on the user's computer, smartphone or tablet

8

display. The user may choose to present the digital files in any of the various types of ways disclosed herein. Other ways of outputting the files are also possible. The user can create and modify various sharing rights so that third parties may view the files and if desired, provide comments, apply tags or even download/copy the files for their own use.

Still another embodiment can provide export functionality. Once a user has used the organization functionality to assign information to data file(s), a user may want to export the data file in its original form (e.g., .jpg, .mp4, etc.) with the tags embedded within the digital file in the form of EXIF tags. In other words, a user can export his or her entire set of digital files, or may choose a subset based on keywords and tags. The exported digital files can include key tags and attributes users have assigned, and in one embodiment, such tags and attributes can be embedded within the digital files. For example, each exported digital file may be imbedded with user-entered data such as the people, location, and event name. This feature will allow the users to back up their files to another source (e.g., external computer hard drive) or to transport it to another venue (e.g., another website that is used for viewing and/or sharing digital files such as a social media website) where it can be viewed with these attributes. This export feature can provide users with the advantage of never losing key data that was stored simply because the user chooses to move its digital files to a new digital archiving system.

A method is also disclosed. The method may include the steps of storing a digital file in a file repository, associating a plurality of digital tags having different tag types with the digital file, providing a search function that permits simultaneously searching by a plurality of digital tag types and provides a search result, and providing a user-configurable output to display the search result. The digital tag types may include, for example, a person's name, a location, a recipe, a date, a relationship between individuals, an event name, a rating, and a document type.

Under the disclosed method, access may be provided to the repository via the Internet. Relationships between users may also be tracked such that a family tree can be displayed. A recipe may also be linked to a user or person. Finally, the method may include the step of outputting a digital file and its associated digital tags into a single file.

While the disclosure is susceptible to various modifications and alternative forms, specific exemplary embodiments thereof have been shown by way of example in the drawings and have herein been described in detail. It should be understood, however, that there is no intent to limit the disclosure to the particular forms disclosed, but on the contrary, the intention is to cover all modifications, equivalents, and alternatives falling within the spirit and scope of the disclosure as defined by the appended claims.

A plurality of advantages arise from the various features of the present disclosure. It will be noted that alternative embodiments of various components of the disclosure may not include all of the features described yet still benefit from at least some of the advantages of such features. Those of ordinary skill in the art may readily devise their own implementations of a digital file organization system that incorporate one or more of the features of the present disclosure and fall within the spirit and scope of the disclosure.

Application (Also Called "MemoryWeb Application" or "System")—

The Application is an online program constructed using a mix of freeware code as well as custom-built proprietary coding with an interface that has many functions including:

US 10,621,228 B2

9

1) the ability to import, associate and embed Digital Tags to Digital Files by using existing Tags of a Digital File as well as the Application's custom Digital Tag options (also called the Application Digital Tag Organizer) for use in the Application; 2) view, sort, annotate, and share Digital Files from the various Application Views; 3) navigate using the proprietary Application Dot-Tag System; 4) filter Digital Files using the Application Advanced Filter System or Fast Search System; 5) store the Digital Files through an interactive Storage System through a User Relationship Table; and 6) export the Digital Files with the Digital Tags embedded within the Digital Files. This Application has already been disclosed in U.S. patent application Ser. No. 13/157,214 and incorporated herein by reference. This Application is also being trademarked as "MemoryWeb" with the US Commissioner for Trademarks on Dec. 26, 2013 under application No.: 86/152,930. The Application may be accessible over various user interfaces that may use the Internet and via applications that would be used on mobile communication devices such as smart phones (e.g., iPhones), Personal Digital Assistants (PDAs) and Tablets (e.g., iPads).

#### Application Views—

The Application Views utilizes the Application's ability to associate Digital Tags to Digital Files and display them in customized views such as Uploads, Collections, Slideshow, Location, Timeline, Family Tree, People Profile, and Recipes.

#### Application Advanced Filter System—

A function that provides search capabilities using one or more Digital Tags within the Application, resulting in a narrowed output display of the applied filters to display one or more Digital Files and viewed in one or more Application Views. The Application Advanced Filter System can allow Digital Files to be searched and sorted according to a plurality of types of data and can be used for creating and organizing special views. The user interface may be user-configurable, and can present the Digital Files on a user's screen based on these user inputs.

#### Application Dot-Tag—

The manner in which a Digital Tag is displayed within the Application using pill-shaped indicators that can reside near a file's image or overlaid on the file's image. MemoryWeb Tags are illustrated as Application Dot-Tags within the Application to help the user organize their Digital Files with key components of related information such as people, date of file, location, collection, star ranking, and recipe. The MemoryWeb Application Dot-Tag is more than just text (as traditional tagging systems) because Memory-Web Application Dot-Tags act as mini search engines that allow the user to see how many matching files there are to that MemoryWeb Tag and if selected will take the user to the corresponding Application View to illustrate the linked search results of that Application Dot-Tag. However, it should be understood that other shapes and indicators are contemplated by the present invention, and may even be user-configurable. For example, the indicator may take the form of a sticky note, a different shape, a dotted shape, or any number of variations of indicators that may be functional in displaying one or more words. Colors may also be used to indicate differing categories of indicators, or differing associations/intersection of the indicators. Within the pill-shaped indicator, the specific Digital Tag information is used to display information about a Digital File. Throughout this document, the Application Dot-Tag is shown as illustrated in FIG. 29 (indicators 0650, 0654, 0655 and 0656).

10

#### Application Digital Tag Organizer System—

Within the Application, a function for assigning one or more Digital Tags to one or more Digital Files at the same time through the Application Dot-Tag Organizer System. This feature allows Digital Tags to be assigned to items such as photos, videos, audio files, and documents. The information created from this functionality drives the outputs for the Application Views. The Application Digital Tag Organizer System will allow the tagging of key items as date, GPS location, star ranking, people (both name and facial recognition), album(s), family relationships, a date, event name, sharing rights, file type, document name, and recipes. Each of the Digital Tags is user-configurable.

#### Application Export System—

Ability to export Digital File(s) from the Application, with the Digital Tags that were created within or imported/uploaded into the Application, embedded inside the Digital File. The Digital Tags within the exported Digital File can then be viewed and used by any other applications that can read EXIF tags.

#### Application Programming Interface ("API")—

The Application Programming Interface (API) is the system that interacts with other communication points or services over HTTP via a POST, GET, PUT, DELETE methods. The API provides a way for users to access their MemoryWeb data outside of the web browser on mobile devices or other web connected devices. The actions within the API deliver MemoryWeb Digital Files and Digital Tags along with all meta data associated with such files and tags.

#### MW Automatic Uploader/Downloader Application—

Separate from the main MemoryWeb Application, there are additional proprietary applications created by MemoryWeb for user to upload and download (export) Digital files to and from the main MemoryWeb Application. The first is the MW Automatic Uploader/Downloader built for Windows compatible computers. The second is the MW Automatic Uploader/Downloader built for MAC computer. Both of the MW Automatic Uploader/Downloader applications can be installed on the user's computer to automatically upload the desired Digital Files from their computer to the main MemoryWeb Application. In addition, the MW Automatic Uploader/Downloader applications allow for Digital Files to be exported from the main MemoryWeb Application to a desired folder on the user's computer with the updated tags embedded within the Digital File.

#### Storage System—

A storage system can be a cloud-based Storage System (e.g., Amazon's AWS, Dropbox, Box.net, Deutsche Telekom's Cloud, etc.), hard-drive, server, or any venue that allows one's information to be stored. The storage system would act as a database and file repository for storage and retrieval of Digital Files to and from the Application.

#### Digital Files—

An electronic file that can be in various file formats (e.g., PNG, JPEG, PDF, TIFF, MP3, MP4, WAV, and GIF) that are of items such as photos, videos, audio files, and documents.

#### Digital Tags—

The word "Digital Tag" refers to any type of digital data that can be assigned to a file to distinguish and describe some aspect of that file through a tagging process. Digital Tags will be comprised of various groups of digital data including:

- a) EXIF Tags—EXIF stands for "Exchangeable Image File Format" and is a standard that specifies the formats for images, sound, video, and ancillary tags. The EXIF standard is an Open Standard produced by the Standardization Committee and is detailed within their

US 10,621,228 B2

11

document called *Standard of the Camera & Imaging Products Association*. Standard of the Camera & Imaging Products Association, CIPA DC-008 Translation-2012. Exchangeable image file format for digital still cameras: EXIF Version 2.3. Established on April, 2010 and Revised on December, 2012. Prepared by: Standardization Committee. EXIF tags are also called “meta tags” or “metadata.” The EXIF information is formatted according to the TIFF specification, and may be found in JPG, TIFF, PNG, JP2, PGF, MIFF, HDP, PSP and XCF images, as well as many TIFF-based RAW images, and even some AVI and MOV videos. The EXIF meta information is organized into different Image File Directories (IFD’s) within an image. The names of these IFD’s correspond to the ExifTool family 1 group names.

When Digital Files are captured with digital cameras (including smartphones), scanners and other systems handling image, video and sound files, certain EXIF tags are automatically populated within the Digital File and can cover a broad spectrum of information such as:

Descriptions (e.g., Title, Subject, Star Ratings, Tags, People, Comments)

Origin (e.g., Authors, Date taken, Copyright)

Image information (e.g., dimensions, color representation and size)

Camera Setting Information (e.g., camera maker, camera model), including static information such as the camera model and make, and information that varies with each image such as orientation (rotation), aperture, shutter speed, focal length, metering mode, and ISO speed information.

Advanced Photo Information (e.g., lens maker, lens model, contrast, brightness, EXIF version, etc.)

File Information (e.g., file name, item type (e.g., JPG file), date created, date modified, size, etc.)

A thumbnail for previewing the picture on the camera’s LCD screen, in file managers, or in photo manipulation software.

Global Positioning System (GPS) information that is also known as geocoding.

The Application will auto-populate any existing EXIF Tags from the original Digital File upon upload into the Applications (as illustrated in FIG. 21) and put this information into the Users Relationship Table on the Storage System.

b) Extensible Metadata Platform (XMP)—This is Adobe’s Extensible Metadata Platform (XMP) format for labeling metadata within an Adobe file.

c) Png Textual Data (tEXt)—This is Portable Network Graphics (PNG) metadata format for labeling within a PNG file.

d) Microsoft Windows Tags—These are Microsoft Windows File Attributes that are stored in Data Blocks from Microsoft’s system.

e) MemoryWeb Tags—These tags are typically developed within MemoryWeb and can relate to People Names, Recipes, Collections, Location Name, Family Relationships (also discussed in MemoryWeb Person Tags), Social Network Data (e.g., ID, contact IDs, etc.), File Folder Batch Name. This would be folder directory name that includes the name of each folder that eventually leads to the folder that the digital file was actually stored within the User’s PC. This is used to help the user organize data within MemoryWeb based upon the

12

users organization system used on their PC. Facial Recognition Data, and other type of tags that are user defined.

f) MemoryWeb Person Tags—These user defined tags within MemoryWeb are specific to each person profile including such areas as Nicknames, Birthdates, Date of Birth, Date of Death, Biography, Family Relationships (e.g., Mother, Father, Brother, Sister, Daughter, Son, Spouse, etc.), Pets, and Firsts (e.g., First Steps, First Words, First time riding a bike, etc.).

The combination of all the aforementioned tags is collectively referred to as “Digital Tags.” The list of groups and Digital Tag types will grow as technology in this area improves over time. These Digital Tags are also referred to as “File DNA” for MemoryWeb.

User Relationship Table—

Within the Application, each User will store the data related to Digital Files, Digital Tags, User Settings, and other specific information related to a User’s repository of information is kept within the User Relationship Table.

Data Blocks—

Within the User Relationship Table, there are Data Blocks that will store information related to EXIF Tags, Microsoft Windows Tags, MemoryWeb Tags, and MemoryWeb Person Tags. These Data Blocks are used to generate the information that is displayed in such key components such as the Application Views and Application Dot-Tags.

Custom Code—

Proprietary scripts and code developed by MemoryWeb to enable key functions such as Dot-Tag relationships and ability to embed new user-defined tags into a file and/or override existing EXIF tags and the ability to navigate the application and it’s functions via connections drawn from the associated tags

Open Source Libraries—

Non-proprietary code taken from the free, open source community integrated that is used by the Application.

User Interface—

The Application may be accessible over various “User Interfaces” including Personal Computers (e.g., Macs, Windows, etc.), Personal Digital Assistants (PDA) (e.g., iPhones) and Tablets (e.g., iPad). The User Interfaces can be controlled through the Application using various tools such as a keyboard, mouse, and touch screen.

The present invention relates to an Application that has many functions including: 1) the ability to import, associate and embed Digital Tags to Digital Files by using existing Tags of a Digital File as well as the Application’s custom Digital Tag options (also called the Application Digital Tag Organizer) for use in the Application; 2) view, sort, annotate, and share Digital Files from the various Application Views; 3) navigate using the proprietary Application Dot-Tag System; 4) filter Digital Files using the Application Advanced Filter System or Fast Search System; 5) store the Digital Files through an interactive Storage System through a User Relationship Table; and 6) export the Digital Files with the Digital Tags embedded within the Digital Files.

Prior to the invention of digital photography, people tended to share photos by displaying printed copies in frames and albums or would store them in a container in hope of preserving these assets for future use or future generations. Important photos would often be inscribed on the back with significant details (people, location, and event) to preserve the memory of that particular occasion. Many people would share their memories by assembling an album that could be viewed with others. Occasionally, extra copies of special photos may have been printed for friends, rela-

US 10,621,228 B2

13

tives, etc. At one time, film slide shows were also a popular medium for sharing photo memories.

With the evolution of Digital Files, there has been explosive growth in the number of individuals taking digital photos, converting old photos to digital copies, making movies and gathering digital documents and in the sheer number of files people are capturing digitally. Today, virtually every personal computing device contains some kind of photo, movie or other type of digital file creator/player/viewer/storer/etc.

At the same time, there is little to no cost for people to store large amounts of photos in various "containers" of the modern age. Facebook, Flickr, Shutterfly and countless other social media and specialty Digital Files sites allow users to post and share images to a community with a frequency and ease that continues to feed the fire of the digital revolution. However, they don't allow much organization of Digital Tags, dynamic viewing of Digital Files, and the ability to export the Digital Files with new Digital Tags. Questionable and ever-changing privacy terms for user/account information, including digital files, have also left the marketplace leery of posting their full digital archive and associated context to these sites.

What is needed to complement the widespread availability of Digital Files is a medium that allows people to organize, view, navigate, search, preserve and share these files with all the memory details captured, connected and vivified via an interactive interface. Such a solution would allow Digital Files, including documents, photos, videos and audio, to tell a full story now, and for generations to come.

As disclosed in detail herein, the application provides the much needed platform that saves a user significant time, provides significant information with minimal screen space, and provides an appealing and customizable interface that will enhance the user experience.

Anytime the MemoryWeb Application exchanges information with an external Storage System or User Interface such as a phone, tablet, computer or other internet based user device, the interaction with the MemoryWeb Application involves Application Programming Interface (API). The API's allow each system to call the specific Digital Files and Digital Tags associated with each request so they can be viewed.

Additional features of the disclosure will become apparent to those skilled in the art upon consideration of the following detailed description of preferred embodiments exemplifying the best mode of carrying out the invention as presently perceived.

The present disclosure relates to one or more of the following features, elements or combinations thereof. The Application allows the importation of Digital Files and then the association of Digital Tags to the Digital Files by using existing EXIF Tags of a Digital File as well as the Application's custom organization of Digital Tags for use in the Application. The Application then allows the Digital Files to be viewed, sorted, annotated, navigated, and shared using the various Application Views. The Application can also filter Digital Files using the Application Advanced Filter System functionality. The Digital Files can be stored through a Storage System that interacts with the Application. In addition, the Application allows for Digital Files to be exported with the Application's Digital Tags embedded within the Digital Files.

The Application may be accessible over various user interfaces that may use the Internet and via applications that would be used on User Interfaces such as Personal Digital Assistants (PDA) (e.g., iPhones) and Tablets (e.g., iPad).

14

The presently disclosed Application provides users with an interactive platform to gather, organize, view, share and archive Digital Files using a proprietary organization system called the Application Digital Tag Organizer and export the modified Digital files with the Application's Digital Tags embedded within the Digital Files using the Application Export feature.

The Application allows users to create, navigate, search, view and share Digital Files, which could represent, for example, the memories a user has collected from the past and present, and could incorporate additional memories for generations to come. As outlined herein, various embodiments are disclosed that can accomplish these and other goals.

#### DESCRIPTION OF EMBODIMENTS

In FIG. 20, the overall process flow of MemoryWeb is depicted. Each of the boxes depicted that are Inside the Memory-Web System (0050) are detailed additional figures within this application. However, to help illustrate the overall process flow, FIG. 20 was created. In FIG. 20, the process begins when original digital file(s) are uploaded to MemoryWeb (0101). This process can take place in a variety of ways including when a user manually selects uploads from the Uploads Application View (see FIG. 35 indicator 1701), installs the a MW Automatic Uploader/Downloader Application on their computer, or imports Digital Files from the users' other sources (e.g., mobile phones, social networks, etc.).

Once a file is uploaded, the System Reading Phase (0100) begins. Information from the System Reading Phase is then sent to the System Interpreting and Adding Data to Relationship Table Phase (0200). During this phase, information is passed back and forth to the Third Party Facial Recognition System (0400) to the Third Party Facial Recognition Provider (0401). The system will also coordinate between the Third Party Social Media (Data Exchange) (0500) and then to various Third Party Media Providers (0501). Another key step from the System Interpreting and Adding Data to Relationship Table Phase is adding both the Digital Files and the corresponding tags to the User Relationship Table (0300). As illustrated in subsequent figures within the patent application, the User Relationship Table serves as the key repository for all of the user's data that generates virtually every display from the application. From the User Relationship Table, the user can use the Applications Digital Tag Organizer System (0600), the Continuous Link of the Application Dot-Tag System (0700), the Advanced Filters System (0800), or the Keyword Fast Search System (0900). The user can also share Digital File(s) through the Share to Social Network Provider System (1000) to a Third Party Social Network Provider (0501) that is outside the MemoryWeb system or use the Share to Individual System (1200) to a Person (1201) that is Outside the MemoryWeb system using the data from the User Relationship Table. To help generate some of the map views, the system will utilize a Third Party Geographical Mapping System (1100) that connects to a Third Party Geographical Mapping Provider (1101) that is Outside the MemoryWeb system. The user can also export Digital Files with the Digital Tags embedded within the Digital File using the Application Export System (1300) that will send a MemoryWeb Modified File from MemoryWeb (1301) to a designated location by the User that is outside the MemoryWeb system.

As illustrated in FIG. 21, the System Reading Phase (0100) is described in further detail. The System Reading

US 10,621,228 B2

15

Phase will first check if the digital file is a duplicate file (0102) that is already in the User's collection. If the file is a duplicate, it will not be uploaded (0104). However, if it is a new file for the user, the System Reading Phase will then locate the EXIF Image File Directories in the digital file (0103) and then send that information to the System Interpreting and Adding Data to Relationship Table Phase (0200).

As further illustrated in FIG. 21, the System Interpreting and Adding Data to Relationship Table Phase will take the EXIF Image File Directories sent from the System Reading Phase and read and iterate through each EXIF tag item (0201). At this time, the system will identify faces from the digital file and then send this information to the Third Party Facial Recognition System (0400) that will coordinate with the Third Party Facial Recognition Provider (0401) that is outside the MemoryWeb. When the Third Party Facial Recognition System (0400) sends back data related to facial recognition of faces in the Digital File, it comes back then the system sends information related to people facial recognition tags to the MemoryWeb Person Tag (Data Blocks) within the User Relationship Table (0300). The detailed process of the Third Party Facial Recognition System (0400) is further explained in FIG. 25.

During the Read & Integrate Through Each EXIF Tag item (0201) the process will also upload a the original Digital File in MemoryWeb (0211), the process will also store a copy of the original file within the User Relationship Table (0300) and create five duplicate copies (0203) of different resolution sizes as follows: XL Duplicate File (0302, Large Duplicate File (0303), Medium Duplicate File (0304), Small Duplicate File (0304), and a Thumbnail Duplicate File (0306). Each duplicate file is used in different parts of the application depending upon the photo size needed for such areas within the Application such as Application Views, Application Dot-Tags, and Application Digital Tag Organizer System.

Another embodiment during the Read and iterate through each EXIF tag item (0201) stage is determining if a MemoryWeb tag exists (0204). A MemoryWeb tag is a Digital Tag that is currently being used as an Application Dot-Tag within the Application. If it is not a Digital Tag that MemoryWeb is currently using, the application will Save EXIF data to the User Relationship Table for Digital File (0205) and send this to the User Relationship table. This is done in case there are EXIF data that are desired to be used in future releases of the Application. For the Digital Tags that are being used in the Application, the system will Parse EXIF data into MemoryWeb Tags (0206), look up MW tag data (0207) and determine if a Digital Tag currently exists (0208). If a Digital Tag does not exist, the system will Create a new MW tag data ((0209) and send this to the appropriate Data Blocks within the User Relationship Table (0300). If Digital Tag data does exist, the system will Associate existing tag data ((0210) to the appropriate Data Blocks within the User Relationship Table (0300).

The third and final area within FIG. 21 is the System Indexing Digital Files and Tag Data Blocks for a Digital File within the User Relationship table (0300). In the User Relationship Table, the user's information system information stored such as User Settings (0390). Copies of the Original Digital File (0301), XL Duplicate File (0302, Large Duplicate File (0303), Medium Duplicate File (0304), Small Duplicate File (0304), and Thumbnail Duplicate File (0306) are stored. The final area of the User Relationship Table relates to the data blocks including EXIF Tag (Data Blocks) (0320), Microsoft Windows Tag (Data Blocks) (0330),

16

MemoryWeb Tag (Data Blocks) (0360), and MemoryWeb Person Tag (Data Blocks) (0380).

In FIG. 22, there are two charts that illustrate EXIF and MemoryWeb Tag Data Blocks. The first chart illustrates the EXIF Tags Version 2.3 (Data Blocks) (0320). For the EXIF Tags Version 2.3 (Data Blocks) (0320), the information from this table is an expert from an Open Source Library code produced by the Standardization Committee that is detailed within their document called Standard of the Camera & Imaging Products Association. While all the EXIF tags that are contained within a Digital File are read (as previously illustrated in FIG. 21 within the System Interpreting and Adding Data to Relationship Table Phase (0200)) and are stored within the system's User Relationship Table (0300), a summary of the primary EXIF tags that are currently used within MemoryWeb are illustrated in the EXIF Tag Blocks (0320). The EXIF tag information is organized into different Image File Directories (IFD's) or "Data Blocks" within an image and organized in the column heading of Tag Label (0321). The names of these IFD's correspond to an EXIF standard for ExifTool family 1 group names that are depicted in the column heading of EXIF Group (0322). The IFD's are stored within a specific data block location within a Digital File and these locations have a standard name of the specific location (0323) within the Digital File. The primary EXIF tags that are read and used by MemoryWeb to generate Application Dot-Tags are: Description Title (0324), Description Rating (0325), Origin Date Taken (0326), Digital File Width (0327), Digital File Height (0328), User Comment (0329), GPS Latitude (0330), GPS Latitude Ref (0331), GPS Longitude (0332), and GPS Longitude Ref (0333).

In FIG. 22, the second chart illustrates the MemoryWeb Tag (Data Blocks) (0360) that overlap with standard EXIF Tag blocks. As previously illustrated in FIG. 21, the EXIF Tag Data blocks are read and brought into the User Relationship Table (0300). When the data is stored within the system's User Relationship Table, they are also stored with the corresponding EXIF tag label as illustrated in the column called MemoryWeb Tag (0361). For example, when a Digital File is brought into MemoryWeb and the system reads the Origin Date Taken (0326) for the EXIF Tag block, the system will denote this in the MemoryWeb table as MediaAsset.DateCreated (0364). This designation is very important as it allows MemoryWeb to re-inject any updated or new MemoryWeb Tag data into the corresponding standard EXIF Tag blocks of a Digital File when it is exported from MemoryWeb (as previously illustrated in FIG. 20 with the Application Export System (1300)). Continuing with this example, if the Origin Date Taken is modified within the MemoryWeb system, when the file is exported through the Application Export System (1300), the new updated date from MemoryWeb (0364) will be mapped to the EXIF Tag Data block with the Tag Label of Origin Date Taken (0326) with the EXIF Group called ExifIFD (0334) and the Location called 0x9003 (0335).

In situations where there is no standard EXIF Tag data block for the MemoryWeb Tag for such items such as Collections, People Location Name, Recipe Name, etc. (0367), they are mapped to a general EXIF Tag data block called User Comment (0329). As the standards for EXIF Tag data blocks change, the system can be mapped to any new specific EXIF Tag data blocks. For example, if an EXIF Tag data block is made for Recipe Name, the MemoryWeb Tag related to Recipe Name will be mapped specifically to that new EXIF Tag data block as opposed to User Comment.

In FIG. 23, there are two charts that illustrate Microsoft Windows and MemoryWeb Tag Data Blocks. The first chart

US 10,621,228 B2

17

illustrates the standard Windows Imaging Component (WIC) Metadata (Data Blocks) (0340). Microsoft Windows has their metadata tag blocks contained in areas called Tag Labels (0341). The primary WIC Metadata data blocks that are read and used by MemoryWeb to generate Application Dot-Tags are: File Name (0342) and File Folder Path (0343). The corresponding MemoryWeb Tag data blocks (0360) for the WIC metadata tag blocks are called MediaAsset.FileName (0372) for the Microsoft file name and MediaAsset.UploadBatch.Batchname (0373) for the Microsoft File Folder Path. The ability for MemoryWeb to read the File Folder Path from Microsoft is a unique process used within MemoryWeb to help the user organize their photos based upon the organization methods they have already used within Microsoft. For example, if the user stored a group of photos on their Microsoft computer in the file directory C:/Photos/2013/First Day of School, MemoryWeb will automatically place the photos that were located within that Microsoft File Folder Path into a MemoryWeb Application Dot-Tag under a collection called "First Day of School" based upon the last folder within the file folder path. An example of the Application Dot-Tag that would be generated from the File Folder Path is in FIG. 31 with the label "First Day of School" (0770). In addition, MemoryWeb will allow the user to view the photos that are within a specific File Folder Path in the MemoryWeb Uploads Application View so that the user can organize photos from the same File Folder Path. An example of how this will be illustrated within MemoryWeb's Uploads Application View is in FIG. 35 with the grouping of photos with the File Path Name C:/Photos/2013/First Day of School (0709).

In FIG. 24, the MemoryWeb Person Tag Data Blocks (0380) that are contained with a User Relationship Table are illustrated. For any person that is added within a user's account, various MemoryWeb Person Tag Data Blocks are stored including: Person Name (0395), Nickname (0381), Birthdate (0382), Date of Death (0383), Biography (0384), Mother (0385), Father (0386), Brother(s) (0387), Sister(s) (0388), Daughter(s) (0389), Son(s) (0390), Spouse(s) (0391), Facial Recognition (0392), FacebookID (0393), Pets (0394), and other data blocks that will be added in the future as the Application grows (0396). These data blocks are primarily used in the People Profile Application View as illustrated in FIG. 32 (indicator 1430). One embodiment within the MemoryWeb Person Tag Data Block contains the FacebookID (0393). As illustrated in FIG. 26 (indicator 0507), information from Third Party Media Providers will be exchanged within MemoryWeb and the user's FacebookID will be provided and stored within the MemoryWeb Person Tag Data Block. In addition, any of the User's contacts from Facebook will also be downloaded into the corresponding MemoryWeb Person Tag Data Blocks for any matching persons within the User's MemoryWeb account. The information from the Third Party Media Providers that are stored within MemoryWeb will be used to provide "push notifications" to the user for various items such as when the user or any one of its contacts posts a photo to that Social Media venue.

As illustrated in FIG. 25, the Third Party Facial Recognition System (0400) is described in further detail. As photos are imported or uploaded into the Application, the systems will request thumbnail Digital Files (0404) from the User Relationship Table (0300). On a routine basis (e.g., daily), the system will retrieve all the thumbnails of Digital Files with unconfirmed faces (0403) and then send those Digital Files (0404) to the Third Party Recognition Provider (0401). The Third Party Facial Recognition Provider (0401) uses

18

their algorithms to find location of eyes, nose, mouth and many other points for each face detected in the photo. They will also determine gender, check if the person is smiling, have eyes open, lips sealed or wearing glasses. The Third Party Facial Recognition Provider will use their algorithms to associate potential matches of faces for the user's collection of photos. For each face, the system will send back attributes including gender (male, female), glasses (true, false), smiling (true, false), lips (sealed, parted), eyes, (open, closed), mood (happy, sad, angry, surprised, disgusted, scared, neutral), field in the response have two subfields: value (string) and confidence (integer). For each attribute, the Third Party Facial Recognition Provider will assign percentages of confidence (0% to 100%) for each attribute that can be used by the MemoryWeb Application to utilize.

The Third Party Facial Recognition Provider will then send the information relating to a person back to MemoryWeb (0405). The MemoryWeb Application parse the identified faces and corresponding Facial Recognition data for each Digital File (0406). The system will interact with the User Relationship Table and determine if the face is an existing (i.e., "trained") face in MemoryWeb where there is a Face ID in the User Relationship Table (0407). If not, the system generates a facial recognition record for unknown person and then sends information to MemoryWeb Person Tag (Data Blocks) in User Relationship Table (0410). If yes, the system will then determine if the face is above the system's thresholds for confirming a face is a specific person in the user's MemoryWeb system (0408). If no, system generates virtual unconfirmed facial recognition record for person and then sends information to MemoryWeb Person Tag (Data Blocks) in User Relationship Table (0411). If yes, the system records and associates specific face for Digital File with a MemoryWeb Person ID and sends to MemoryWeb Person Tag (Data Blocks) in User Relationship Table (0409).

Typically, the ability to confirm and deny facial recognition matches will be within the People Profile Application View as illustrated in FIG. 32 within the facial recognitions area (indicator 1442). The system will also have other facial resonations area where the user can confirm or deny the suggested facial recognitions of a person for a Digital File. When the user denies the suggested facial recognition, the system dis-associates potential person match Tag, search's the user's collection for other potential matches, and then sends information to Tag Data Block of Relationship Table for the Digital File. If the user accepts the suggested facial recognition, the system sends this facial recognition tag confirmation to the User Relationship Table for the Digital File. Once a confirmation is made, the newly associated Digital File will have that confirmed person Application Dot-Tag associated to that Digital File for all Application Views. Each time an accepted or denied facial recognition is made for a specific person, the specific data points used for facial recognition is improved and sent to the Third Party Facial Recognition Provider for more accurate confirmations of that person during the next run for that person.

As illustrated in FIG. 26, the Third Party Media System (Data Exchange) (0500) is described in further detail. There are numerous types of third party media systems that are contemplated for MemoryWeb including social network providers (e.g., Facebook, Twitter, and LinkedIn) and other photo sites (e.g., Flickr and Picasa). In addition, it is contemplated for the ability to print Digital Files from MemoryWeb using third party print providers such as Walgreens or Shutterfly. Further contemplated solutions might be from digital file warehouses such as Dropbox and box-



US 10,621,228 B2

19

.net. All of the Third Party Media Systems will interact with MemoryWeb using the same system that is described within FIG. 26. The Third Party Social Media System starts when the user initiates sharing of their information with Third Party Media Provider with MemoryWeb (0502). When this is initiated, the system will send registration information (0503) to the Third Party Media Provider (0501). Once received, the Third Party Media Provider will send back a confirmation with the Third Party Social Media ID (0504) and then the system will send the information (0505) to the User Settings Table (0390) within the User Relationship Table (0300). The system will then send daily requests from the User Relationship Table for contact names and IDs (0506) to the Social Media Provider (0506). If there are new contact names that are not part of the user's current people, the system will receive new contact names and IDs from the Social Media Provider (0501). The user will have the ability to confirm or deny matches (0508) with their contacts within MemoryWeb. If there is a match, the system will associate the existing person within MemoryWeb to the same ID of the person within the Third Party Social Media platform (0509) and then send this to the User Relationship Table. If there is not a match, the system will add this additional contact as a new person and send (0510) this to the User Relationship Table. If the user wants to share or print Digital Files from MemoryWeb, they can do this with the Share to Third Party Media Provider System (1000) that is further detailed within FIG. 46.

In FIG. 27, the MemoryWeb User Settings Table is illustrated. As illustrated in the User Settings Table (1900), various data blocks of information is stored including the User's Name (1901), Payment ID (1902) that is used with third party payment providers, Password (1903), Account Type (1904) (i.e., free or paid account), User's email (1905), Language preference (1906), Date format preference (1907), Email notification (1908) preferences, the ability to share Contacts (with third Party Social Media) (1909), Facebook ID (1910), API Token (1911), Payment Date (1912) and other settings that will evolve as the Application grows (1913).

In FIG. 28, the Application Digital Tag Organizer System (0600) is illustrated. Within various Application Views the user can select, add, delete and edit MemoryWeb Tags for such areas as people, date, location, collections, star rankings, and recipes. An illustration of an Uploads Application View where MemoryWeb Tags for a Digital File can be selected, added, deleted, or edited is illustrated in FIG. 35. The Application Digital Tag Organizer System begins when the user selects one or more Digital Files in MemoryWeb (0601). The system then sends a request to the User Relationship Table for the specific Digital File (0602). The system then retrieves the Digital File and the Digital File Tag Data Blocks (0603) from the User Relationship Table (0300). Next, the system will display the Digital File and the corresponding Digital File Tag Data Blocks in the form of Application Dot-Tags (0604). An example of how the system can illustrate a Digital File with the corresponding Application Dot-Tags is in FIG. 31 (indicators 0780, 0765, 0766, 0768, 0770, and 0771).

If the user selects an Application Dot-Tag (0605), the system will utilize the Continuous Link of Application Dot-Tags System (0700) to produce the results of that Application Dot-Tag within one of the Application Views that is later illustrated in FIG. 30.

If the user selects add for a MemoryWeb Tag (0606), the user can add a new MemoryWeb Tag. When the user begins to type in text to add a tag, the system will produce

20

suggestions on matching MemoryWeb Tags or the option to add a new tag (0607). If a matching tag is selected (0608), the system associates the new MemoryWeb tag to the Tag Block of the Relationship Table for the Digital File (0610). Alternatively, if the tag does not exist the user can create a new MemoryWeb Tag (0609) and then the system associates the new MemoryWeb tag to the Tag Block of the Relationship Table for the Digital File (0611).

If the user selects edit for a MemoryWeb Application Dot-Tag (0612), the user can add information text to edit the MemoryWeb Tag and the system will produce suggestions or matching MemoryWeb tags or the option to add a new tag (0613). If there is a match within the user's system, the matching MemoryWeb Tag will appear and the user can select the MemoryWeb Tag (0614). Once the matching tag is selected, the system associates the new MemoryWeb tag to the Tag Block of the Relationship Table for the Digital File (0616). Alternatively, the user can create a new MemoryWeb Tag (0615) and then the system associates the new MemoryWeb tag to the Tag Block of the Relationship Table for the Digital File (0617). If the user selects delete for a MemoryWeb Application Dot-Tag (0618), the system deletes the association of MemoryWeb tag to Tag Data Block of Relationship Table for Digital File (0619).

In FIG. 29, the Application Dot-Tag Shape and Content is illustrated (0650). MemoryWeb Tags are illustrated as Application Dot-Tags within the Application to help the user organize their Digital Files with key components of related information such as people, date of file, location, collection, star ranking, and recipe. The MemoryWeb Application Dot-Tag is more than just text (as traditional tagging systems) because Memory-Web Application Dot-Tags act as mini search engines that allow the user to see how many matching files there are to that MemoryWeb Tag and if selected will take the user to the corresponding Application View to illustrate the linked search results of that Application Dot-Tag (as illustrated in FIG. 30). In essence, the Application Dot-Tags operate as mini search engines for the user's Digital Tags.

The structure of an Application Dot-Tag (0650) can take on an solid-line enclosed shape of a pill, dot or similar depiction (0651) and within the shape the name of the MemoryWeb Tag is displayed (0653) along with the number of Digital Files (0652) that are also associated with that same MemoryWeb Tag. FIG. 29 further illustrates more examples of the Application Dot-Tags. If the number of Digital Files associated with a specific MemoryWeb Tag is less than a certain number (e.g., 1000), the actual number of Digital Files associated with that MemoryWeb Tag is displayed. In FIG. 29, this is illustrated with an Application Dot-Tag that has 453 files that are associated with the location of Cologne, Germany (0654). However, if the number of Digital Files associated with a specific MemoryWeb tag are greater than the character length, a greater sign along with a number sequence that is less than the total number of associated Digital Files will be displayed (0655). In FIG. 29, this is illustrated with an Application Dot-Tag that has ">999" (0657) as the number of Digital Files with the exact same MemoryWeb Tag and if the name of the MemoryWeb tag is longer than the text sequence, only a portion of the MemoryWeb tag will be displayed along with an ellipse as illustrated with "Holiday Photos from . . ." (0658). Finally, the Application Dot-Tag may be illustrated with a dotted or similar distinction (as opposed to a solid line) to help indicate a partial relationship (0656). In the illustration in

## US 10,621,228 B2

21

FIG. 29, the dotted line is to indicate that only some of the selected Digital Files have the MemoryWeb Tag of Frank Smith.

In FIG. 30, the Continuous Link of Dot Tag System is illustrated (0700). When a user selects an Application Dot-Tag, it will take them to the corresponding Application View that relates to the type of MemoryWeb Tag. The Continuous Link of Application Dot-Tag System begins when a user selects an Application Dot-Tag (0701).

If the Application Dot-Tag is a Person (0702), the system will send a request to display the requested information (0708) to the User Relationship Table (0300). A sample illustration of how a user can select a person Application Dot-Tag is in FIG. 31 (indicator 0764). For a person tag, the system receives data for that person from the User Relationship Table and displays the relationship data in a People Profile View (0709). A sample illustration of a selected Person Application Dot-Tag is in FIG. 32 (indicator 1430).

If the Application Dot-Tag is a Collection (0703), the system will send a request to display the requested information (0708) to the User Relationship Table (0300). A sample illustration of a collection Application Dot-Tag that can be selected is in FIG. 31 (indicator 0781). For a collection tag, the system receives data for that collection from the User Relationship Table and displays the relationship data in a Collection View (0710). A sample illustration of a selected Collection Application Dot-Tag within a Collection View is in FIG. 33 (indicator 1530).

If the Application Dot-Tag is a Location (0704), the system will send a request to display the requested information (0708) to the User Relationship Table (0300). A sample illustration of a location Application Dot-Tag that can be selected is in FIG. 31 (indicator 0768). For a location tag, the system receives data for that location from the User Relationship Table and displays the relationship data in a Location View (0711). A sample illustration of a selected Location Application Dot-Tag within a Location View is in FIG. 34 (indicator 1630).

If the Application Dot-Tag is a Date (0705), the system will send a request to display the requested information (0708) to the User Relationship Table (0300). A sample illustration of a date Application Dot-Tag that can be selected is in FIG. 31 (indicator 0766). For a date tag, the system receives data for that date from the User Relationship Table and displays the relationship data in Uploads View with that date filtered (0712). A sample illustration of a selected Date Application Dot-Tag within Uploads View is in FIG. 40 (indicator 0861).

If the Application Dot-Tag is a Recipe (0706), the system will send a request to display the requested information (0708) to the User Relationship Table (0300). For a recipe tag, the system receives data for that recipe from the User Relationship Table and displays the relationship data in a Recipe View with that date filtered (0713). A sample illustration of a selected Date Application Dot-Tag within Recipe View is in FIG. 36 (indicator 1800).

The Application is contemplated to have additional types of Application Dot-Tags (0707) in the future including Family Trees, Timespan, etc. and each of these MemoryWeb Tags will go through the same continuous link of Application Dot-Tag process. For an additional type of Application Dot-Tag, the system will receive data from the User Relationship Table and displays the relationship data in the corresponding view for that type of Application Dot-Tag (0714).

If within any of the Application Views the user selects a Digital File (0715), the Digital File is then displayed in a

22

Slideshow View (0716) where the user can again select an Application Dot-Tag (0701) and start the continuous link of Application Dot-Tag functionality over again. Also within an Application View, if the user selects another Application Dot-Tag (0717), the entire continuous link of Application Dot-Tag functionality begins again and sends the request back to ask if the newly selected Application Dot-Tag is a person (0702).

In FIG. 31, the Slideshow view of a Digital File, Application Dot-Tags, and comments are illustrated (0750). When viewing a Digital File or group of Digital Files within the Slideshow Application View (0750), the selected Digital File is displayed in the center of the screen (0754). If the user wants to export this photo with all the associated MemoryWeb Tags, they can select export (0751) which will initiate the Application Export System as illustrated in FIG. 49. If the user wants to see the Digital File that is one file before the selected Digital File, they select the left arrow (0752) or they can select the right arrow (0753) to display the next photo in the sequence. Below the Digital File, the comments (0755) that are specific to that Digital file are depicted. If the user wants to edit the comments, they select edit (0756). If the user would like to see a moving slideshow of all the photos that are part of the group of Digital Files, they can select on the play sign (0757) or simply click the specific thumbnail of a Digital File (0758) to be displayed. The user can also have the slideshow in a full screen slideshow by selecting the full screen icon (0759). If the user wants to share the individual Digital file via email, they can select the mail icon (0760) or share it through a third party median provider, in this case Facebook (0761). A more detailed description on how the share functionality works is in FIG. 46 (indicator 1000).

In FIG. 31, each Application Dot-Tag that is associated with a Digital File is illustrated to the right of the Digital File under each major MemoryWeb Tag area. For this example, the People area (0763) has Application Dot-Tags of Jackson Smith (0780) and JC Smith (0764) associated with the selected Digital File. In the Dates area (0765), the Application Dot-Tag of August 28, 2013 (0766) is associated with the selected Digital File. In the Locations Area (0767), the Application Dot-Tag of Abe Lincoln Elementary School (0768) in the location associated with the selected Digital File. In the Collections Area (0769), the Application Dot-Tags of First Day of School (0770) and Jackson and JC Photos 2013 (0771) are associated with the selected Digital File. The Star Rankings Area (0782) shows that four out of five stars (0773) was selected for this Digital File. If the Digital File is associated with a Recipe (0774) the Application Dot-Tag would be illustrated in this area. The Media Type area indicates that this is a Memento (0776). If the user wants to delete this Digital File from the Application, they can select the Delete Item function (0779). If the user wants to edit the Application Dot-Tags, they can select the edit icon (0762) and all the MemoryWeb Tag areas will be in edit mode as later illustrated in FIG. 35. Finally, any original Digital File detail (e.g., file name, camera specifications, etc.) is illustrated (0778).

In FIG. 32, both of the People Application Views are illustrated. The first People Application View (1400) is used to display all the people that were created within the user's Application. This view can be seen by selecting "People" (1401) from any of the Application Views within the Application. The people can be listed in various sort orders though a drop-down (1402) such as: Newest to Oldest (added), Oldest to Newest (added), Alphabetical (A-Z), Alphabetical (Z-A), etc. Additional sorts are contemplated such as age

US 10,621,228 B2

23

sort. For each person, a thumbnail of their face along with their name is depicted. In this figure, Jon Smith (1403) and JC Jon Smith (1404) along with some other people are illustrated. Also, the user can determine if they want to have 20, 50 or 100 people shown at one time (1405) by selecting the corresponding number box. At the top of every Application View within the Application, the user can select Fast Search (1450) that is further described in FIG. 44. Also at the top of every Application View within the Application, the user can select Apply Filters (1451) that is further described in FIGS. 37-43.

In the second People Application View within FIG. 32, a single people profile (1430) is illustrated. The individual's name is displayed at the top of the page (1431) along with their Nicknames (1433), when they were Born (1434), who their parents are (1435), Siblings (1436), Children (1437), and the person's Biography (1438). The Person Profile Photo of that individual is illustrated (1439) and if the user wants to change the profile photo, they can change by selecting change profile photo (1440). For each person, the system can allow the user to quickly see all the tags that are associated to a person. In this example, the system illustrates that there are four photos (1452) associated with that person and will also illustrate thumbnails of each of the four photos (1446). These thumbnails can be selected and then the user will be taken to the slideshow view for that Digital File. If the user selects Collections (1441), all of the collections that the person has been tagged within will be displayed. If the user selects Facial Recognitions (1442), all the faces that are confirmed or need to be confirmed are displayed. This is the area where the user can select to confirm or deny a suggested facial recognition through the Third Party Facial Recognition System that is illustrated in FIG. 25. If the user selects Locations (1443), all of the Locations that the specific person has been tagged within will be displayed. If the user selects Family Relationships (1444), the seven people that the user is associated with will be displayed in a family chart or tree. If the user selects Recipe (1445), all the recipe's that the user has been tagged within will be displayed. If the user wants to edit any details within the individual people profile, they can select edit (1447) and all the fields will allow the ability to edit the details. If the user selects any of the Application Dot-Tags such as the individuals mother Jane Smith (Doe) (1449), the application will utilize the Continuous Link of Application Dot-Tag System (see FIG. 30) and take the user to an individual people profile view of Jane Smith (Doe). If the user selects View all People (1432), the Application will go back to the multiple People View (1400).

In FIG. 33, both of the Collection Application Views are illustrated. The first Collection Application View is used to display all the collections that were created within the user's Application (1500). This view can be seen by selecting "Collections" (1501) from any of the Application Views within the Application. The collections can be listed in various sort orders though a drop-down (1502) such as: Newest to Oldest (added), Oldest to Newest (added), Alphabetical (A-Z), Alphabetical (Z-A), etc. For each collection, a thumbnail of a Digital File from that collection depicted. In this figure, Smith Family Photos (1503), Europe Trip (1504), First Day of School (1505), Jackson and JC Photos 2013 (1506), and Baseball Games (1507) is illustrated. At the top of every Application View within the Application, the user can select Fast Search that is further described in FIG. 44. Also at the top of every Application View within the Application, the user can select Apply Filters that is further described in FIGS. 37-43.

24

In the second Collections Application View within FIG. 33, a single collection (1530) is illustrated. The individual collection name is displayed at the top of the page (1532). Thumbnails of each Digital File within the specific collections are illustrated. In this example, the system shows photos (1533) associated with the Smith Family Photos Collection. If the user wants to edit any Digital Files within the collection, they can select edit (1535) and then the user can add or delete any Digital Files as well as set the cover photo for a collection. If the user wants to share this collection (1534), they can select a method to share and this will take the user through the Share to Third Party Media Provider System illustrated later in FIG. 46. If the user selects View all Collections (1531), the Application will go back to the multiple Collection View (1500).

In FIG. 34, both of the Location Application Views are illustrated. The first Location Application View is used to display all the locations that were created within the user's Application (1600). This view can be seen by selecting "Locations" (1605) from any of the Application Views within the Application. The locations can be listed in various sort orders though a drop-down (1606) such as: Newest to Oldest (added), Oldest to Newest (added), Alphabetical (A-Z), Alphabetical (Z-A), etc. For each location, a thumbnail of a Digital File from that location depicted. In this figure, Wrigley Field (1601), Abe Lincoln Elementary School (1602), Home Sweet Home (1603), and Stonehenge (1604) is illustrated. What is also contemplated instead of a Digital File from that location is that a zoomed in image of a map from the specific location using the Third Party Geographical Mapping System later depicted in FIG. 47. At the top of every Application View within the Application, the user can select Fast Search that is further described in FIG. 44. Also at the top of every Application View within the Application, the user can select Apply Filters that is further described in FIGS. 37-43.

In the second Locations Application View within FIG. 34, a single location (1630) is illustrated. The individual location name is displayed at the top of the page (1632). Thumbnails of each Digital File within the specific collections are illustrated. In this example, the system illustrates a one photo (1633) taken at Wrigley Field (1634) that is associated with the location called Wrigley Field. If the user wants to edit any Digital Files within the collection, they can select edit (1637) and then the user can add or delete any Digital Files. If the user wants to share the Digital Files associated with this location (1636), they can select a method to share and this will take the user through the Share to Third Party Media Provider System illustrated later in FIG. 46. If the user selects View all Collections (1631), the Application will go back to the multiple Collection View (1600). As part of the individual Location View, an interactive map displaying a zoomed-in image of the specific location is displayed (1635).

In FIG. 35, the Uploads Application View and how it uses the Application Digital Tag Organizer System is illustrated (1700). Similar to the concept of writing certain information "on the back of a photo," the system's digital tagging system (also called Application Digital Tag Organizer) allows a user to select large amounts of Digital Files and add Digital Tags that can characterize and document the digital file(s). Digital Files can be individually or group organized at the same time for many tags including, but not limited to, a person's name, family relationships of the subjects to the user and between each other (e.g., mother/father), location, date, album, comments, document type (e.g., birth certificate, poetry), recipe, making or rating, and sharing rights. One or more Digital

## US 10,621,228 B2

25

Files can be selected at the same time and displayed with an overlaid check mark when activated (1705 and 1710) and then Digital Tags can be assigned to a single file at a time or to a plurality of files at once. For example, if a user wishes to assign the tag “grandma” to 100 photos at once, the system provides a way for a user to select all 100 photos (1713) and enter the tag only once. In addition, the system does include an indicator that appears when a user hovers over the Digital File providing all the relevant Digital Tags associated with that specific Digital File (1737) and in this example it shows the caption of “Family Smith finally sees Stonehenge,” that four People are tagged to this photo, one collection is tagged to this photo, there are zero people recognized through Facial Recognition, and the date of this photo is from December 21, 2013. If the user wants to delete a single photo from uploads, they can click on the “x” (1735) that is displayed when the user hovers over the Digital File thumbnail. When there are multiple Digital Files, the user can determine how many images are displayed at one time in the Items Per Page Buttons (1738) that include such numbers at 20, 50 and 100 on the page at the same time. When there is more Digital Files that items per page, they are automatically grouped by pages and a Page Button (1739) can be selected to see the next set of Digital Files.

In the Uploads Location View, Digital Files can be directly uploaded to the Application by selecting Upload Files (1701) and the user will have the option to select the specific Digital Files to be uploaded from their Storage System. Users also have the option to install the MemoryWeb Download Application that can be installed on either a Microsoft or MAC computer that will automatically upload and sync photos to and from the users Storage System to the MemoryWeb Application. Also displayed is the amount of space being used by the user within the Application (1702). Uploads of Digital Files can be listed in various sort orders though a drop-down (1703) such as: Newest to Oldest (added), Oldest to Newest (added), Alphabetical (A-Z), Alphabetical (Z-A), etc. In addition, the Digital Files can be sorted by File Batch Name (A-Z) or File Batch Name (Z-A). In FIG. 35, the sort of File Batch Name (A-Z) is selected (1703) and this provides three groups of Digital Files with the names File Folder C:/2013/Family Fun (1704), File Folder C:/2013/General (1706), and of File Folder C:/2013/First Day of School (1709). The File Batch Name is created when Digital Files are uploaded to the Application. The File Batch Name allows the user to see the file directory of how they had their Digital Files stored from another Storage System (e.g., on their computer hard drive) that allows for easier organization within the MemoryWeb Application. For example, in the sort of File Folder C:/2013/General (1706), two digital files (1707 and 1708) are illustrated that came from the exact same file folder path of the Users Storage system upon upload. At the top of every Application View within the Application, the user can select Fast Search that is further described in FIG. 44. Also at the top of every Application View within the Application, the user can select Apply Filters that is further described in FIGS. 37-43.

On the right side of FIG. 35, the associated Application Dot-Tags along with the ability to organize one or more Digital Files at the same time is illustrated. At the top of the screen, it shows how two Digital Files are selected (1712) that correspond to the selected (checked) Digital Files (1705 and 1710). Below this area illustrates all the Application Dot-Tags that are associated with the two selected Digital Files. The user has the option to select all (1713) the Digital Files being viewed in the Uploads View as well as selecting none (1714). By selecting all, the user can administer

26

Application Dot-Tags to all the selected Digital Files at the same time. If the user wants to delete Digital Files, they can select the Digital Files to be deleted and then select the Delete Selection (1715) option.

In FIG. 35, each Application Dot-Tag that is associated with the selected Digital File(s) is illustrated. For this example, the People area (1716) has Application Dot-Tags of Jackson Smith (1734), Jane Smith (1733), Jon Smith (1731, and JC Smith (1717) that are associated with the two selected Digital Files (1710 and 1705). If the user wants to add a person to all the selected Digital Files, they can click on “+Add People” (1718) that will display a pop-up where the user can search for an existing person within the user’s existing people within the Application or add a new person to the user’s group of people within the Application. It is contemplated to have a Facial Recognition suggestions appear in this area of the Application that will allow users to confirm or deny a recognized person to a specific Digital File. However, the current version of the People area is useful for situations where a face is not recognized, but the user desires to tag a person to a Digital File, they can manually assign a Person Application Dot-Tag to that Digital File for an existing person (e.g., if the person’s back is turned, it is a document that contains that person, a piece of art created by that person, etc.).

In the Dates area (1719), the organize functionality for assigning a Digital Tag of a date within the Digital File(s) is illustrated. Upon upload, the date when the Digital File was created is automatically read by the Application and illustrated as an Application Dot-Tag (1720 and 1730). As illustrated in the Dates area, the Application Dot-Tags of July 4, 2013 (1720) and August 28, 2013 (1730) are illustrated as they correspond to the dates that are associated with each of the selected Digital Files. If the user wants to change the date for all the selected Digital Files, they can click on “+Add/Edit Date” (1721) that will display a pop-up where the user can add a new date for the selected digital files within the Application. This is a very useful feature when an incorrect date is assigned to a digital file (e.g., if a photo from October 31, 1951 was digitized on December 31, 2012, the digitized dates would show as an Application Dot-Tag that the user can change in this section to the correct date of October 31, 1951).

In the Locations area (1722), the organize functionality for assigning Digital Tags of locations within the Digital File(s) is illustrated. Upon upload, the GPS location of where the Digital File was created (if applicable) is automatically read by the Application and illustrated as an Application Dot-Tag for locations of the selected files. In the locations area, the Application Dot-Tags of Abe Lincoln Elementary School (1723) and Wrigley Field (1735) are illustrated as they correspond to the locations that are associated with each of the selected Digital Files. If the user wants to change the location for all the selected Digital Files, they can click on “+Add/Edit location” (1724) that will display a pop-up where the user can search for an existing location within the user’s existing locations within the Application or add a new location to the user’s group of locations within the Application. Another added function to assign a location to the selected Digital Files is to use Search with Map (1732) that utilizes the Application’s Third Party Geographical Mapping System that is further illustrated in FIG. 47 that allows the user to type in any relevant information (e.g., location name, address, state, etc.) and then the Application will search and pinpoint that location on a map.

In the Collections Area (1725), the organize functionality for assigning Digital Tags of albums within the Digital

US 10,621,228 B2

27

File(s) is illustrated. Digital Files can be associated to multiple albums. As illustrated in the Collections area, the Application Dot-Tags of First Day of School (1726), Jackson and JC Photos 2013 (1727), and Baseball Games (1728) are associated with the Collections for the selected Digital Files. If the user wants to add a Collection to all the selected Digital Files, they can click on "+Add/Create Collection" (1729) that will display a pop-up where the user can search for an existing Collection within the user's existing Collections within the Application or add a new Collection to the user's group of Collections within the Application.

Within the Uploads View, the ability to perform similar tagging of Star Rankings, Recipes, Family Relationships, and Media Types/Document Type are also contemplated as part of the Application Digital Tag Organizer System. For Star Rankings, it is contemplated to assign MemoryWeb Tags of star rankings within the Digital File(s). Upon upload, if the star ranking is already contained within the Digital File, it is automatically read by the Application and illustrated as an Application Dot-Tag. The user can select one or more Digital Files and then apply a star ranking between 1 and 5 in the Uploads Application View. For Recipes, it is contemplated to assign MemoryWeb Tags of Recipes to Digital File(s). The user can select one or more Digital Files and then type within the "Recipe" search bar to either add a new recipe or associate the Digital File(s) to an existing recipe. Digital Files can be associated to multiple recipes. For Media Type/Document Type, the user can choose from a list of common document types (e.g., Birth Certificate, Death Certificate, Marriage Certificate, etc.) can be utilized for common document type associations. Once a document type is assigned to one or more Digital Files, the document type appears within an Application Dot-Tag. Digital Files can be associated to multiple document types.

In FIG. 36, an individual recipe view (1800) allows one to see all the information that is associated with a specific recipe. The name of the specific recipe is displayed at the top of the page (1801) and the People Profile picture of the "chef" associated with the recipe is illustrated (1804). If no chef is assigned, the user can select the "+add/edit chef" (1803) to either choose an existing person from the user's People in the Application or add a new person.

The view of various Digital Files within the recipe (1808) along with scrolling through the Digital Files using the arrow icons (1814 and 1815), the ability to share this recipe with others by selecting the sharing icon (1812). As the Digital Files are selected on using the film strip on the bottom, a larger thumbnail illustrating the Digital File is shown (1807). The recipe view also allows you to choose a chef for the recipe from the people within the user's Application. When a chef is selected, the profile picture (1804) of the person along with their name as an Application Dot-Tag (1816) is displayed. For each recipe, the user can insert the ingredients (1809), directions (1810), and comments (1811). Each of these areas can be edited by selecting the edit button (1813). Another contemplated feature allows the user to apply star rankings for the recipe as well as categorize they type of recipe (e.g., appetizer, entrée, etc.). It is further contemplated that the Digital Files within the individual recipe view may also include videos where they can be watched showing the chef making the recipe. It is also contemplated that the recipes will be interactive with external sources (e.g., the Food Network) so that recipes can be shared or imported with the Application and that visitors to the account will be able to post/share comments about the recipe. It is further contemplated that the user can print the recipe using a print icon.

28

In FIG. 37, the Advanced Filters System is illustrated (0800). This feature allows the user to narrow the Digital Files being viewed within the Application Views by searching the user's entire collection of MemoryWeb Tags within the Application and then displaying the filtered information in one of the Application Views. Advanced Filters System can be filtered by such items as key words (or plurality of key words), event names, location, people, albums, star rating, file type, document type, and dates. A user may filter based on more than one criterion at a time. To help users quickly identify Digital Files that may still need to be organized, the advanced search filter also allows users to isolate files that have no date, no location, no people, no specific date/range, and no upload date information or are lacking any other tag. The Advanced Search Filter can be used within many of the views the Application to narrow the set of Digital Files being viewed. For example, you can use the Advanced Filter Button to only show the map view of locations a specific person has traveled in their lifetime.

When a user selects the "Advanced Filters" from almost any Application View (0801) (the button can be seen in FIGS. 32, 33, 34, 35, and 36), a pop-up will appear that allows the user to type in text into the text box (0802). As the user is typing, the system sends a request (0803) to the User Relationship Table (0300) to look up any possible MemoryWeb Tag matches. The system will then produce the request (0804) and illustrate the potential matches of the filters to the user (0805). As the user types in another letter, the process of sending a request (0803) to the User Relationship Table (0300), producing results (0804) and producing a new set of results (0805) is re-run. If the user selects one of the suggested MemoryWeb tags (0806) and then selects to apply this filter (0807), the system will send this request to the User Relationship Table (0300). This portion of the Advanced Filter System is further illustrated in FIG. 38.

If the Advanced Filter System is applied within the Uploads View, the system retrieves data for the applied filter(s) from the User's Relationship Table and displays the relationship data (0809). An example of this output is later illustrated in FIG. 39 (indicator 0850).

If the Advanced Filter System is applied within the Collections View, the system retrieves data for the applied filter(s) from the User's Relationship Table and displays the relationship data (0810). An example of this output is later illustrated in FIG. 39 (indicator 0852).

If the Advanced Filter System is applied within the Locations View, the system retrieves data for the applied filter(s) from the User's Relationship Table and displays the relationship data (0811). An example of this output is later illustrated in FIG. 40 (indicator 0856).

If the Advanced Filter System is applied within the People View, the system retrieves data for the applied filter(s) from the User's Relationship Table and displays the relationship data (0814). An example of this output is later illustrated in FIG. 39 (indicator 0854).

If the Advanced Filter System is applied within other contemplated views within the Application such as Recipe, Family Trees, Timespan, etc. the system retrieves data for the applied filter(s) from the User's Relationship Table and displays the relationship data (0812).

If the user decides to add an additional filter (0813), the process is repeated when the user selects "Advanced Filter" (0801) while the pre-existing filters are still applied. An example of this process is later illustrated in FIG. 42 and FIG. 43. If the user selects an Application Dot-Tag, then the

## US 10,621,228 B2

29

continuous Link of Application Dot-Tags System is engaged as illustrated in FIG. 30 (0700).

In FIG. 38, the process of the Adding the First Application Dot-Tag using the Advanced Filter is illustrated. This is a visual depiction of the process that was illustrated in FIG. 37. In Stage 1 (0830), the user selects "Apply Filters." This takes the user to Stage 2 where the Application generates the Apply Multiple Filters box (0831). The user can then type in the alphanumeric text search criteria within the Advanced Filters text box (0838). In this example, the word "Smith" was typed within the text box. As the alphanumeric text is typed within the text box, the application automatically generates the available filters (0836) that meet the criteria. In this example, the user selects the Application Dot-Tag of a person named JC Smith (0832). In Stage 3, "Apply" is selected and then the application lists the Application Dot-Tag of a Person named JC Smith as a current active filter (0837). This filter will then be applied to each Application view that is further illustrated in FIGS. 39 through 41. If the user wants to clear all the filters, they can select "clear filters" (0839).

In FIG. 39, an illustration of the results for a Single Application Dot-Tag Filter for each Application view is depicted. If the Advanced Filter is applied in the Uploads Application View (0850), the filter of "JC Smith" (0851) is illustrated and only the Digital Files that contain the person JC Smith are illustrated. If the Advanced Filter is applied in the Collections Application View (0852), the filter of "JC Smith" (0853) is illustrated and only the Collections that contain the person JC Smith are illustrated. If the Advanced Filter is applied in the People Application View (0854), the filter of "JC Smith" (0855) is illustrated and only the person named JC Smith is illustrated.

In FIG. 40, an illustration of the results for a Single Application Dot-Tag Filter for a date within the Uploads Application View is depicted (0860). If the Advanced Filter is applied using a date filter within the Uploads Application View (0861), the filter date of "2013-07-04" (0876) is illustrated and only the Digital Files that contain that date are illustrated.

In FIG. 41, an illustration of the results for a Single Application Dot-Tag Filter in the Location Application View is depicted (0870). Within the Location Application View the Digital Files are displayed within an interactive map (Google map shown as an example). The Location View can also provide additional outputs such as a journey route that identifies the specific locations for an event or trip that can be customized by users. In this view, individual or groups of Digital Files are illustrated as photo thumbnails (see indicators 0874 and 0875) on the map and the user can select the thumbnail to see all the Digital Files with the same location (as seen FIG. 34 (indicator 1630)) or the user can use the interactive map and narrow the map view by either using the zoom in/zoom out bar (0876) on the left or simply selecting the map. Note that the pinned locations include a thumbnail of the Digital File (or Collection cover) and the number of Digital Files for that location.

If the Advanced Filter is applied in the Locations Application View, the filter of "JC Smith" (0872) is illustrated and only the Digital Files that contain the person JC Smith are illustrated with their geographic location on the map. The user can select to clear this filter (0873) or see this Advanced Filter with the view of locations as a list (0871). In FIG. 41, there are two illustrated on the map (0874 and 0875).

In FIG. 42, the process of the Adding another Application Dot-Tag using the Advanced Filter is illustrated. Continuing on the process that was illustrated in FIG. 38 where the first

30

Application Dot-Tag filter of "Person: JC Smith" was applied, the ability to add a second Application Dot-Tag is further illustrated in FIG. 42. As with FIG. 38, FIG. 42 is a visual depiction of the process that was illustrated in FIG. 37. In Stage 1 (0880), the user selects "Apply Filters." This takes the user to Stage 2 where the Application generates the Apply Multiple Filters box (0881). The user can then type in the text search criteria for the second Advanced Filter within the Advanced Filters text box. In this example, the word "Abe" was typed within the text box. As the alphanumeric text is typed within the text box, the application automatically generates the available filters that meet the criteria. In this example, the user selects the Application Dot-Tag of a location named Abe Lincoln Elementary School (0882). In Stage 3 (0883), the application lists the Application Dot-Tags of both the Person named JC Smith (0884) as well as the location of Abe Lincoln Elementary School (0885) as part of the Current Active Filters. The user then selects "Apply" (0886) to see these filters illustrated in the Application Views. This filter will then be applied to each Application view as previously illustrated in FIGS. 39 through 41.

In FIG. 43, an illustration of the results for Adding Another Application Dot-Tag Filter in the Location Application View is depicted (0890). Continuing on the process that was illustrated in FIG. 42, in FIG. 43 (0890) the Application Dot-Tag filters of "Person: JC Smith" (0891) and "Location: Abe Lincoln Elementary School" (0892) are illustrated. There is one overlapping location that contains both filters for a Digital File that is illustrated on the map (0893).

In FIG. 44, the Fast Search System is illustrated (0900). Throughout the Application, groups or individual Digital Files can be searched quickly using the Fast Search bar that is at the top of each Application View. Once a key word or phrase is entered into this area, the user's entire collection of Digital Tags within the Application that includes all the Digital tags are searched for potential matches. This feature allows the user to search their entire collection of MemoryWeb Tags within the Application and then displays the information grouped by people, collections, locations, documents, and recipes. The Fast Search System can be searched by such items as key words (or plurality of key words), event names, location, people, albums, star rating, file type, document type, and dates.

When a user selects the Fast Search bar from almost any Application View (0901), the user can type in alphanumeric text into the text box (0902). As the user is typing, the system sends a request (0903) to the User Relationship Table (0300) to look up any possible MemoryWeb Tag matches. The system will then produce the request (0904) and illustrate the potential matches by category for the user (0905). As the user types in another letter, the process of sending a request (0903) to the User Relationship Table (0300), producing results (0904) and producing a new set of results (0905) is re-run. If the user selects one of the suggested MemoryWeb tags (0906), the system will send this request to the User Relationship Table (0300). This process is further illustrated in FIG. 45.

If the user selects a person Fast Search tag, the system retrieves data for the person from the User's Relationship Table and displays the relationship data (0907) in the Person Profile View as illustrated in FIG. 32 (indicator 1430).

If the user selects a collection Fast Search tag, the system retrieves data for the collection from the User's Relationship Table and displays the relationship data (0908) in the Collection View as illustrated in FIG. 33 (indicator 1530).

US 10,621,228 B2

31

If the user selects a location Fast Search tag, the system retrieves data for the location from the User's Relationship Table and displays the relationship data (0909) in the Location View as illustrated in FIG. 34 (indicator 1630).

If the user selects a date Fast Search tag, the system retrieves data for the date from the User's Relationship Table and displays the relationship data (0910) in the Uploads View as illustrated in FIG. 40 (indicator 1861).

If the Fast Search System is applied within other contemplated views within the Application such as Family Trees, Timespan, etc. the system retrieves data for the search from the User's Relationship Table and displays the relationship data (0911). As part of the contemplated search process is to also search comments related to a Digital File.

In FIG. 45, the process of using the Keyword Fast Search is illustrated. This is a visual depiction of the process that was illustrated in FIG. 44. In Stage 1 (0930), the user selects the Fast Search bar at the top of one of the Application Views. This takes the user to Stage 2 (0931) where the user can then type in the alphanumeric text search criteria within the Fast Search text box (0932). In this example, the word "Wrigley" was typed within the text box. As the alphanumeric text is typed within the text box, the application automatically generates the available MemoryWeb Tag results (0933) that meet the criteria. Note how the results are organized by various MemoryWeb Tag categories such as Person, Collection, Location, Recipe, and comments. In Stage 3 (0934), the user selects one of the results. In this example, the user selects the location of Wrigley Field (0935). When the user selects a specific MemoryWeb Tag, it takes them to Stage 4 where the information related to that tag is displayed in the corresponding view as discussed within FIG. 44. For the example where the user selected the Location of Wrigley Field, the user was taken to the individual locations Application View where the location of Wrigley Field and the corresponding Digital Files are displayed (0936).

In FIG. 46, the Share to Third Party Media Provider System (1000) is illustrated. This feature allows the user to share Digital Files from MemoryWeb directly to a third party application. The process begins when the user selects to share a Digital File or collection of Digital Files within the MemoryWeb Application (1001). Examples of where the user can select share can be seen in FIG. 31 (indicator 0760), FIG. 33 (indicator 1534), FIG. 34 (indicator 1636), and FIG. 36 (indicator 1812). Once the request is made, the system requests the Digital File and Tag Data Blocks (1002) from the User Relationship Table (0300). The system then retrieves the Digital File from the User Relationship Table (1003). At the same time, the system will also retrieve the Digital Tags from the Relationship Table (1004). The system will then inject the tags to the corresponding EXIF Tag Data Blocks (1005). The mapping of the EXIF Tag Data Blocks and those of MemoryWeb Data Blocks is illustrated in FIG. 22. Note, for any tags that were modified within the MemoryWeb application, only the new tag information will be transferred into the EXIF Tag Data Blocks. The system then combines the EXIF Tag Data Blocks and embeds them within the Original Digital File (1006). The application then exports the Digital File with the new EXIF Tag Data Blocks using the Application Export System (1300) which then sends the Digital File outside the MemoryWeb Application to the Third Party Media Provider (0501).

In FIG. 47, the Third Party Geographical Mapping System is illustrated (1100). When Digital Files are imported into MemoryWeb, if there is any GPS data available from the EXIF Tags (See FIG. 22 (indicators 0330, 0331, 0332

32

and 0333)), the system will utilize this data and automatically create a MemoryWeb location tag within the Application (See FIG. 22 (indicators 0368, 0369, 0370 and 0371)). However, if the GPS coordinates were missing from a Digital File when it was imported into the Application (See FIG. 50 (indicators 1418 and 1419)), the user can add the Location (which the application will automatically add the associated GPS tags) to the Digital File using the Application Digital Tag Organization System (see FIG. 28). As locations are associated with a Digital File, the Application can interact with a Third Party Geographical Mapping System to pull maps that correspond to the exact location of Digital Files that have a location tag (see FIG. 34 (indicator 1630 and FIG. 40, indicator 0875)). In addition, the Application utilizes a world map view to illustrate all the locations that are associated to one or more Digital Files for a user within the Location Application View (see FIG. 41 (indicator 0880)).

The Third Party Geographical Mapping System begins when a Location Application Dot Tag (1102) is selected (1104), the system will send a request (1105) to the User Relationship Table (0300). Examples of when Location Application Dot-Tags can be selected are illustrated in FIG. 31 (indicator 0768 and FIG. 35, indicators 1723 and 1735). In FIG. 47 if the Locations Application View is selected (1103), the system will send a request (1105) to the User Relationship Table. The Location Application View can be selected from almost any Application view as illustrated in FIG. 34 (indicator 1605). When either a single location or the world map view is selected, the system will retrieve the data (1108) from the User Relationship Table (0300) and send a request (1106) to the Third Party Geographical Mapping Provider (1101) who generates the map request and then sends the information back to the system for the specific location (1107). At the same time, the Application Dot-Tags and Digital Files associated with the location or map request are retrieved and then sent (1109) to the Locations Application view. The system will combine the map information along with the Application Dot-Tags and Digital Files and display this information within the Location Application View (1100). Examples of a single Location Application View can be seen in FIG. 34 (indicator 1630) and FIG. 40 (indicator 0875), and an example of a world map view can be seen in FIG. 41 (indicator 0880).

In FIG. 48, the Share to Individual System is illustrated (1200). The Share to an individual person or a group of people starts when a user initiates share of a Digital File or a Collection of Digital Files (1201). Examples of where the user share functions are illustrates are in FIG. 31 (indicators 0760 and 0761), FIG. 33 (indicator 1534), FIG. 34 (indicator 1636), and FIG. 36 (indicator 1812). Next, the system requests the Digital File and Tag Data Blocks (1202) from the User Relationship Table (0300). They system will retrieve corresponding Digital File (or collection of Digital Files) (1203) from the User Relationship Table.

At the same time, the system will also retrieve the Digital Tags of the Digital File from the Relationship Table (1204). The system will then inject the tags to the corresponding EXIF Tag Data Blocks (1206). The mapping of the EXIF Tag Data Blocks and those of MemoryWeb Data Blocks is illustrated in FIG. 22. Note, for any tags that were modified within the MemoryWeb application, only the new tag information will be transferred into the EXIF Tag Data Blocks. The system then combines the EXIF Tag Data Blocks and embeds them within the Original Digital File (1205). The application then exports the Digital File with the new EXIF Tag Data Blocks using the Application Export System



US 10,621,228 B2

33

(1300) which then sends the Digital File outside the MemoryWeb Application to an Individual or Group of People (1207).

In FIG. 49, the Application Export System is illustrated (1300). The Application Export System starts when a user selects the export of a Digital File within the application (1302) or has installed the MW Automatic Uploader/Downloader Application (1308). An example of where the user can select the export of a Digital file within the Application is FIG. 31 (indicator 0751). If the user has installed the MW Automatic Uploader/Downloader Application, the export functionality of the user's entire collection of Digital Files will be downloaded to the User's desired folder on their computer with the Digital Tags embedded within the Digital Files. If neither a user initiated download nor the MW Automatic Uploader/Downloader Application is not used, then the Application Export is not initiated (1309). For either a user initiated download or one using the MW Automatic Uploader/Downloader Application, the system requests the Digital File(s) and Tag Data Blocks (1303) from the User Relationship Table (0300). They system will retrieve corresponding Digital File (or collection of Digital Files) (1304) from the User Relationship Table. At the same time, the system will also retrieve the Digital Tags of the Digital File from the User Relationship Table (1305). The system will then inject the tags to the corresponding EXIF Tag Data Blocks (1306). The mapping of the EXIF Tag Data Blocks and those of MemoryWeb Data Blocks is illustrated in FIG. 22. Note, for any tags that were modified within the MemoryWeb application, only the new tag information will be transferred into the EXIF Tag Data Blocks. The system then combines the EXIF Tag Data Blocks and embeds them within the Original Digital File(s) (1307). The application then exports the Digital File(s) with the new EXIF Tag Data Blocks to the desired Storage System of the user (1301).

In FIG. 50, there are three charts for the Digital File Image File Directory Data Blocks of JPG Photo within Microsoft Before and After MemoryWeb. This Figure is meant to demonstrate how the EXIF Tag Data Blocks for a Digital File (in this example a JPG file) prior to the use of MemoryWeb Application appear and then how these EXIF Tag Data Blocks are populated with Digital Tags upon export from the MemoryWeb Application.

The first chart illustrates common EXIF Tags (Data Blocks) (1401) and lists certain common the EXIFTool Family 1 Group names that are displayed in the file properties of a JPG file when using Microsoft Windows (these are the same EXIF Tag Blocks that were illustrated in FIG. 22 (indicator 1320)). In the second chart (1402), the Digital Tags associated with the original Digital File are displayed. In the third chart (1403), the updated Digital Tags for the same original Digital File once exported from the MemoryWeb Application is displayed.

In the second chart (1402), the original Digital File prior to import to the MemoryWeb Application did not have Digital Tags for data blocks such as Description Rating (1416), Description Comments (1417), GPS Latitude (1418), GPS Longitude (1419). Also in the second chart the Digital Tags for the data blocks of File Folder Path (1420) and File Date Created (1421) are illustrated.

In the third chart (1403), the original Digital File that was exported from the MemoryWeb Application now contains new or modified Digital Tags for certain data blocks. For example, a star rating of four out of five stars (1410) with the new MW Modified Digital File is now associated with the Description Rating (1404) where it was blank (1416) with the original file before using the MemoryWeb Application

34

Another example is the listing of MemoryWeb Tags within the Description Comments data block (1411) as: CAPTION: Jackson and JC's first day at school!, PERSON: Jackson Smith, JC Smith, LOCATION NAME: Abe Lincoln Elementary School, COLLECTION: First Day of School, COLLECTION: Jackson and JC Photos 2013, DATE: 8/28/2013. All of these Digital Tags are now associated with the Description Comments (1405) where it was blank (1417) with the original file before using the MemoryWeb Application.

Also updated in the MW Modified Digital File are the GPS Latitude (1412) and GPS Longitude (1413) as Digital Tags that were assigned in the MemoryWeb Application using the location feature with the Application Digital Tag Organizer System. These tags now replace the blank tags (indicators 1418 and 1419) that were in the original file before using the MemoryWeb Application.

A final example is how the date was modified in the MemoryWeb Application where a new date of August 28, 2013 (1415) was assigned to the Digital File. This replaced the old date that was originally tagged with a date of November 1, 2013 (1421). In a typical Digital File, only the date and perhaps the GPS location if taken with certain newer photo device is pre-populated in a Digital File. For the example in FIG. 50, the Digital File may have been created or scanned on November 1, 2013, but with the MemoryWeb Application Digital Tag Organizer System the user was able to correctly assign the date the photo was taken and now this date is always part of the Digital File within the MemoryWeb Application, but also when the Digital File is exported from MemoryWeb.

A benefit of the Export System is that users can export a single Digital File or their entire set of Digital Files (using the MW Automatic Uploader/Downloader Application), with all the updated Digital Tags from the MemoryWeb Application embedded within the Digital File(s). This feature is unique as it will allow the users to back up their files to another source (e.g., external computer hard drive) or to transport it to another venue (e.g., another website that is used for viewing and/or sharing Digital Files such as a social media website) where it can be viewed with these Digital Tag attributes. This export feature can provide users with the advantage of never losing key data that was stored simply because the user chooses to move its Digital Files to a new digital system.

The application also contemplates the use of a Family Tree Application View where the individual people that have been created within the Application can be displayed with family relationships. This view can illustrate interactive family trees where one can see the family tree of an individual or family. Any family relationships created in the user's personal profile are already pre-populated by the Application for the Family Tree View. If a user selects on an individual within the family tree, it will take them to the people profile Application View of that person. Family Trees can quickly be viewed with the family tree drop-down sort feature. As with other areas within the Application, the family tree view can be narrowed down using an Advanced Filters System. For matching family members, the system will have drag/drop functionality to make new associations to a family tree. It is also contemplated that various family tree views could be displayed (e.g., pedigree chart, fan chart, directs descendants chart, etc.). In addition, it is contemplated that family tree relationships from either data files (e.g., GEDCOM files) or other sources (e.g., Family Search



US 10,621,228 B2

35

database) would either be imported into the user's versions of the Application or utilize these sources in associating the family tree information.

Another Application View that is contemplated is Timespan or Timeline. The Timeline Application View will have an interactive timeline to display the dates within the Digital Files of the Application for a user. The timeline view acts as an interactive filter or funnel of Digital Files whereas when the user starts to define the parameters of dates towards the bottom, the information above it is filtered to display the major groups of Digital Files that meets the selected date range criteria in various formats until you are able to view an individual Digital File. This funnel approach is designed to allow the user to appreciate the vast amount of data that can be associated with a date range, but then allow them to filter the information with the user's desired criteria. This will be a very useful tool when users want to see the growth and progress of an individual as well as memorialize a lifetime of a friend or family member.

While the disclosure is susceptible to various modifications and alternative forms, specific exemplary embodiments thereof have been shown by way of example in the drawings and have herein been described in detail. It should be understood, however, that there is no intent to limit the disclosure to the particular forms disclosed, but on the contrary, the intention is to cover all modifications, equivalents, and alternatives falling within the spirit and scope of the disclosure as defined by the appended claims.

The invention claimed is:

1. A method comprising:

responsive to a first input, causing a map view to be displayed on an interface, the map view including:

- (i) an interactive map;
- (ii) a first location selectable thumbnail image at a first location on the interactive map; and
- (iii) a second location selectable thumbnail image at a second location on the interactive map;

responsive to an input that is indicative of a selection of the first location selectable thumbnail image, causing a first location view to be displayed on the interface, the first location view including (i) a first location name associated with the first location and (ii) a representation of at least a portion of one digital file in a first set of digital files, each of the digital files in the first set of digital files being produced from outputs of one or more digital imaging devices, the first set of digital files including digital files associated with the first location;

responsive to an input that is indicative of a selection of the second location selectable thumbnail image, causing a second location view to be displayed on the interface, the second location view including (i) a second location name associated with the second location and (ii) a representation of at least a portion of one digital file in a second set of digital files, each of the digital files in the second set of digital files being produced from outputs of the one or more digital imaging devices, the second set of digital files including digital files associated with the second location; and responsive to a second input that is subsequent to the first input, causing a people view to be displayed on the interface, the people view including:

- (i) a first person selectable thumbnail image including a representation of a face of a first person, the first person being associated with a third set of digital files including digital photographs and videos;

36

(ii) a first name associated with the first person, the first name being displayed adjacent to the first person selectable thumbnail image;

(iii) a second person selectable thumbnail image including a representation of a face of a second person, the second person being associated with a fourth set of digital files including digital photographs and videos; and

(iv) a second name associated with the second person, the second name being displayed adjacent to the second person selectable thumbnail image.

2. The method of claim 1, wherein the map view further includes a first indication feature associated with the first location selectable thumbnail image, the first indication feature being based on a number of digital files in the first set of digital files.

3. The method of claim 2, wherein the first indication feature is connected to the first location selectable thumbnail image.

4. The method of claim 2, wherein the first indication feature includes a first number indicative of the number of digital files in the first set of digital files.

5. The method of claim 2, wherein the map view further includes a second indication feature associated with the second location selectable thumbnail image, the second indication feature being based on a number of digital files in the second set of digital files.

6. The method of claim 5, wherein the second indication feature is connected to the second location selectable thumbnail image.

7. The method of claim 5, wherein the second indication feature includes a second number indicative of the number of digital files in the second set of digital files.

8. The method of claim 2, further comprising, subsequent to the map view being displayed on the interface, responsive to an input that is indicative of zooming in on the interactive map, modifying the first indication feature.

9. The method of claim 2, further comprising, subsequent to the map view being displayed on the interface, responsive to an input that is indicative of zooming out on the interactive map, modifying the first indication feature.

10. The method of claim 2, further comprising, subsequent to the map view being displayed on the interface, responsive to an input that is indicative of a filter selection, modifying the first indication feature.

11. The method of claim 1, wherein the first location selectable thumbnail image is a first collection cover image and wherein the second location selectable thumbnail image is a second collection cover image that is different than the first collection cover image.

12. The method of claim 1, wherein the first location selectable thumbnail image includes a representation of at least one of the digital files in the first set of digital files, and wherein the second location selectable thumbnail image includes a representation of at least one of the digital files in the second set of digital files.

13. The method of claim 12 wherein the representation of the at least a portion of the one digital file in the first set of digital files is not overlaid on the interactive map, and wherein the representation of the at least a portion of the one digital file in the second set of digital files is not overlaid on the interactive map.

14. The method of claim 1, wherein the first location view includes a representation of at least a portion of all of the digital files in the first set of digital files and the second location view includes a representation of at least a portion of all of the digital files in the second set of digital files.

## US 10,621,228 B2

37

15. The method of claim 1, further comprising:  
 responsive to an input that is indicative of a selection, in  
 the first location view, of the representation of the at  
 least a portion of the one digital file in the first set of  
 digital files, causing a first digital file to be displayed on  
 the interface; and  
 responsive to an input that is indicative of a selection, in  
 the second location view, of the representation of the at  
 least a portion of the one digital file in the second set  
 of digital files, causing a second digital file to be  
 displayed on the interface.  
 16. The method of claim 1, further comprising:  
 receiving alphanumeric text as a tag;  
 associating the tag with a first digital file in the first set of  
 digital files;  
 receiving a request to export the first digital file; and  
 responsive to receiving the request to export, exporting  
 the first digital file by causing the first digital file to be  
 communicated along with the tag.  
 17. The method of claim 1, further comprising, prior to  
 receiving the first input, causing the interface to display a

38

plurality of selectable elements, the plurality of selectable  
 elements including a location selectable element and a  
 people selectable element, wherein the first input is indica-  
 tive of a selection of the location selectable element, and  
 wherein the second input is indicative of a selection of the  
 people selectable element.

18. The method of claim 1, further comprising responsive  
 to an input that is indicative of a selection of the first person  
 selectable thumbnail image, causing a first person view to be  
 displayed on the interface, the first person view including (i)  
 the first name and (ii) a representation of each digital file in  
 the third set of digital files.

19. The method of claim 18, further comprising respon-  
 sive to an input that is indicative of a selection of the second  
 person selectable thumbnail image, causing a second person  
 view to be displayed on the interface, the second person  
 view including (i) the second name and (ii) a representation  
 of each digital file in the fourth set of digital files.

\* \* \* \* \*